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Harold L. Ickes, *Secretary*

OFFICE OF EDUCATION

George F. Zook, *Commissioner*

# INSTITUTIONS OF HIGHER EDUCATION IN DENMARK

By

ALINA M. LINDEGREN

Specialist in Western European School Systems  
Office of Education



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## FOREWORD

Numerous accounts of education in Denmark have been published in the United States but nearly all of them deal with rural and folk high schools and other special phases, to the neglect of the system of general training which is the basic, strong organization that forms the mainstay of Danish culture. This study of higher education in Denmark will to some extent overcome that deficiency in our information by presenting a brief general sketch of the preparation for higher studies and a detailed statement about the institutions of higher education. It is one of a series of studies which now includes similar accounts for Sweden and Norway.

BESS GOODYKOONTZ,  
*Acting Commissioner.*

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## INSTITUTIONS OF HIGHER EDUCATION IN DENMARK

### A. INTRODUCTION

*Purpose of the study.*—The purpose of this bulletin is to present to collegiate registrars, committees of admission, and State departments of public instruction, such data about the institutions of higher education in Denmark as will enable these officials and offices to form fairly accurate judgments of how higher training in Denmark compares with that in the United States. The information is intended mainly for use in connection with evaluating the credentials of students trained in Denmark who wish to continue their studies in the United States but it should be of value also to any one interested in higher education.

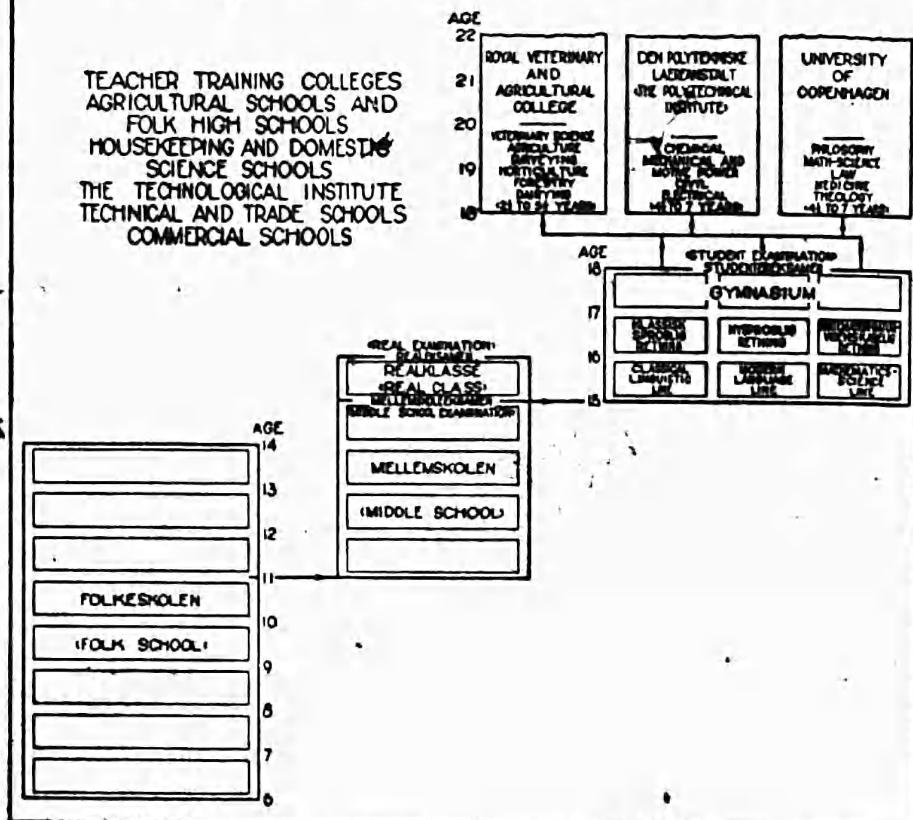
The following summary of the organization of education and of the work of the secondary schools is a brief explanation of the place which the institutions of university rank hold in the national scheme of education in Denmark.

### B. PREPARATION FOR HIGHER STUDIES

*Organization of instruction.*—By regulations of 1903 and 1904, instruction in Denmark in preparation for higher studies is begun in a 7-year Folkeskole (folk or primary school) which the children enter at the age of 6 or 7. After 4 or 5 years of attendance at the Folkeskole, or when they are about 11 years of age, those children that will later attend the university or some other higher institution move over into a 4-year Mellemeskole (middle school) which is a lower secondary school. Having completed the Mellemeskole, normally at about 15 years of age, and having passed its afsluttende Aarsprøve or Mellemeskoleeksamen (leaving or middle school examination), they proceed to the 3-year gymnasium graduation from which admits to a higher institution. (See Graph I, p 2).

Most of the children that are not destined for higher education go directly through the 7-year course of the Folkeskole and after graduation from it participate in Fortsaettelses-undervisning (continuation instruction) at day, part-time, or evening schools offering training in technical, trade, or commercial lines. For girls there are schools also in house-keeping and domestic science. Others complete the Mellemeskole and, instead of entering a gymnasium, go to the 1-

# THE SCHOOL SYSTEM OF DENMARK



### Graph I

year full-time continuation class, called the *Realklasse* (real or modern class) of the *Mellemskole*. This closes with the *Realeksamen* (real or modern examination) which opens the way to a few exceptional phases of higher education (see pp. 4, 6), but in general leads to minor civil-service and administrative positions.

The curricula of the schools are prescribed by the National Government through Undervisningsministeriet (the National

Ministry of Education). The program of study in the Folkeskole and in the Mellemeskole is the same for all pupils, but in a gymnasium the pupil may elect the klassisk-sproglige (classical-linguistic), the nysproglige (modern language), or the matematisk-naturvidenskabelige Retning (mathematics-science line of study). Most gymnasias offer only the last two of these lines but provision for the classical-linguistic line is found in a number of the older schools.

In 1903 entry to the secondary schools was provided for girls. At present about three-fifths of the gymnasias are coeducational.

*Secondary school curricula.*—The two following tables are copies of the Normaltimeplaner (normal curricula) for the Mellemeskole and the gymnasium as issued by the Ministry of Education for these schools in 1904 and 1906, respectively. They give the number of hours of instruction<sup>1</sup> per week of each year of training for each subject of instruction and constitute the minimum requirements. As may be seen, a limited choice of subjects or number of hours or of both is allowed in some instances and in general practice there is a slight variation. Deviation from the plan, however, must be approved by the Ministry of Education.

TABLE 1.—Curricula for the Mellemeskole

Subjects of instruction	Number of hours per week by year				Total
	I	II	III	IV	
1	2	3	4	5	6
Religion					
Danish	2	2	2	1	7
English	5	4	4	5	18
German	6	3	3	3	15
History	(*)	5	4	4	13
Geography	3	2	3	2	10
Natural history	2	2	2	2	8
Physics	2	2	2	2	8
Arithmetic and mathematics	4	5	6	7	22
Writing	2	1	1	1	5
Drawing	2	2	1	1	6
Gymnastics	4	4	4	4	16
Singing	2	2	1		

<sup>1</sup> In class I, a school may offer either English or German. If German is offered in class I, the hours per week for the 4 years are 6-3-3-3, and those for English, 0-6-4-4.

<sup>1</sup> An hour of instruction means 1 class hour of 50 minutes.

TABLE 2.—*Curricula for the three lines of the gymnasium*

Subject of instruction	Line of instruction								
	Classical-linguistic by year			Modern language by year			Mathematics- science by year		
	I	II	III	I	II	III	I	II	III
I	3	3	4	5	6	7	8	9	10
Religion	1	1	1	1	1	1	1	1	1
Danish	4	4	4	4	4	4	4	4	4
English	2	2	2	1 <sup>5</sup>	5	5	2	2	2
German	( <sup>6</sup> )			4	4	4	( <sup>7</sup> )		
French	4	4	4	4	4	4	4	4	4
Latin	6	5	5	4	4	3			
Greek	6	6	6						
Archaeology	1			1	1	1	1	1	1
History	3	3	4	3	3	4	3	3	4
Geography and natural history	2	2	2	2	2	2	3	3	2
Physics							6	6	6
Mathematics	2	2	2	2	2	2	6	6	6
Gymnastics and singing	6	6	6	6	6	6	6	6	6

<sup>1</sup> Five hours per week if English is the major; when German is the major subject, there are 8 hours of German and 4 hours per week of English.

<sup>2</sup> In the classical-linguistic, and in the mathematics-science line there is a choice of 2 hours per week in either English or German.

*Curricula for the Realklasse.*—In Danish, English, German, practical arithmetic, and mathematics (and in French if it was offered in the Mellem-skole) the work is a continuation of that offered in the Mellem-skole. In physics, history, geography, and natural history, the work of the Realklasse is a more intensive study of parts already covered in the work of the Mellem-skole. Work may be taken up also in subjects not included in the curriculum of the Mellem-skole.

The following is a copy of the Timeplan (curriculum) recommended by the Ministry of Education in 1906 for the Realklasse of schools for boys and for coeducational schools:

Curriculum	Hours
Danish	4
Two foreign languages	8
Practical arithmetic and mathematics	4
Physics, history, geography, and natural history	8
Optional subjects	6

In the curricula of girls' schools and in the curricula for girls in coeducational schools practical arithmetic and mathematics may be omitted, thus allowing for girls 10 hours for optional subjects.

*Interpretation of the tables.*—In studying the above tables for a consideration of the fullness of the training that a

graduate from the secondary school system of Denmark has had, it is well to keep the following points in mind:

1. The Mellemeskole offers the lower level of secondary training and closes with the Mellemeskoleeksamen (middle school examination). A certificate of having passed this examination admits the holder to a gymnasium or to the 1-year real school course.
2. Most gymnasia offer two lines of training—the modern language and the mathematics-science line. A few gymnasia also offer a classical-linguistic line.
3. Graduation from a gymnasium is marked by a certificate of having passed the Studentereksamen (student examination). This certificate is the regular prerequisite for admission to institutions of university rank in Denmark.
4. In the Mellemeskole and the gymnasium the school year consists of about 41 weeks with 6 days of instruction per week and 6 periods of 50 minutes each of recitation per day.
5. The total number of recitation periods in the 3-year course of the gymnasium is about 4,328. Dividing this number by 25 which is the average number of recitation periods per week in a high school in the United States, the 4,328 recitation periods correspond to 173.12 5-day weeks. Counting 41 weeks as a school year we find that on a purely time basis the 3-year course of the gymnasium in Denmark corresponds to 4.22 years at a high school in the United States.
6. Primary and secondary education in Denmark is completed normally in 11 or 12 years. Ordinarily the graduate of a gymnasium is about 18 or 19 years of age when he receives the certificate of having passed the Studentereksamen. If he has a good mastery of English he should be able to take up the work at a standard university or college in the United States at the beginning of the freshman year.
7. The secondary schools of Denmark are under the direct guidance of the Ministry of Education which, as we have seen, arranges the minimum requirements of the curricula, inspects the schools, and in the case of the municipal and private secondary schools grants the right to hold final examinations. It prepares the questions for the written part of the various leaving examinations of the secondary schools and appoints the censors who assist in the examinations.

8. The Mellemkoleeksamen is conducted by the teachers of the school and as an examination is not of much importance except as an entrance examination to the gymnasium and to the Realklasse. At the Studentereksamen the pupil's teacher is the chief examiner but two censors approved by the Ministry of Education must be present. The questions to be answered in writing are the same for all schools. To pass the Studentereksamen the pupil must receive a mark of at least "good minus."

9. The Realeksamen marks the completion of study in the Realklasse and qualifies one who has passed it for vocational training in technical, commercial, and agricultural courses at higher institutions; and for lower civil-service positions, apprenticeships, and various other appointments.

10. The Pigeskoleeksamen (girls' school examination) is the leaving examination from a girls' secondary school. It is practically on a par with the Realeksamen and perhaps a trifle more advanced. In 1931 this examination was passed by 84 pupils.

11. In addition to the examinations mentioned, there is the almindelige Forberedelseseksamen (general preliminary examination). This is the leaving examination of a Realskole (real school). Prior to the reorganization of education in 1903 and 1904, the real schools were the schools of non-classical, modern, or scientific secondary training. After the establishment of the Mellemkoler and the Realklasse, the number of schools offering the general preliminary examination declined from 178 in 1907 to 21 in 1913; since then the number has increased so that in 1931 the examination was offered by 67 Realskoler. The examination at present is practically on a par with the Realeksamen.

### C. INSTITUTIONS OF UNIVERSITY RANK

The institutions of university rank in Denmark <sup>2</sup> include:

1. One national university:

Københavns Universitet at Copenhagen.  
(University of Copenhagen).

<sup>2</sup> The enrollment at each of the institutions of higher training in Denmark during the academic year, 1930-31, unless otherwise indicated, was as follows: Københavns Universitet, 6,026; Universitetsundervisningen i Jylland (1931-32), 126; Den Polytekniske Læreanstalt (1931-32), 901; Den Kongelige Veterinær og Landbohøjskole, 681; Handelshøjskolen, 472; Den Farmaceutiske Læreanstalt, 86; Det Kongelige Akademi for de Skønne Kunster, 261; Tandlægeskolen, 164.

2. One institution which offers some work on university levels:  
Universitetsundervisningen i Jylland at Aarhus (University Instruction in Jutland).
3. At least six institutions which offer advanced training in trade and professional subjects:
  - (a) Den Polytekniske Laereanstalt, Danmarks Tekniske Højskole at Copenhagen, (The Polytechnical Institute, Technical College of Denmark).
  - (b) Den Kongelige Veterinaer og Landbohøjskole at Copenhagen (The Royal Veterinary and Agricultural College).
  - (c) Den Handelsvidenskabelige Laereanstalt, Handelshøjskolen at Copenhagen (The School of Commercial Science, Commercial College).
  - (d) Den Farmaceutiske Laereanstalt at Copenhagen (The Pharmaceutical Institute).
  - (e) Det Kongelige Akademi for de Skønne Kunster at Charlottenborg, Copenhagen (The Royal Academy of Fine Arts).
  - (f) Tandlaegeskolen at Copenhagen (School of Dentistry).

#### KÖBENHAVNS UNIVERSITET (UNIVERSITY OF COPENHAGEN)

*Administration and organization.*—The University of Copenhagen was founded in 1478, and opened during the following year by virtue of a bull issued by Pope Sixtus IV in 1475. It is a national institution under the general supervision of the Ministry of Education, but is practically self-governing through its own akademiske Laererforsamling (academic faculty council), Konsistorium (consistory), rector, administrator, and faculties.

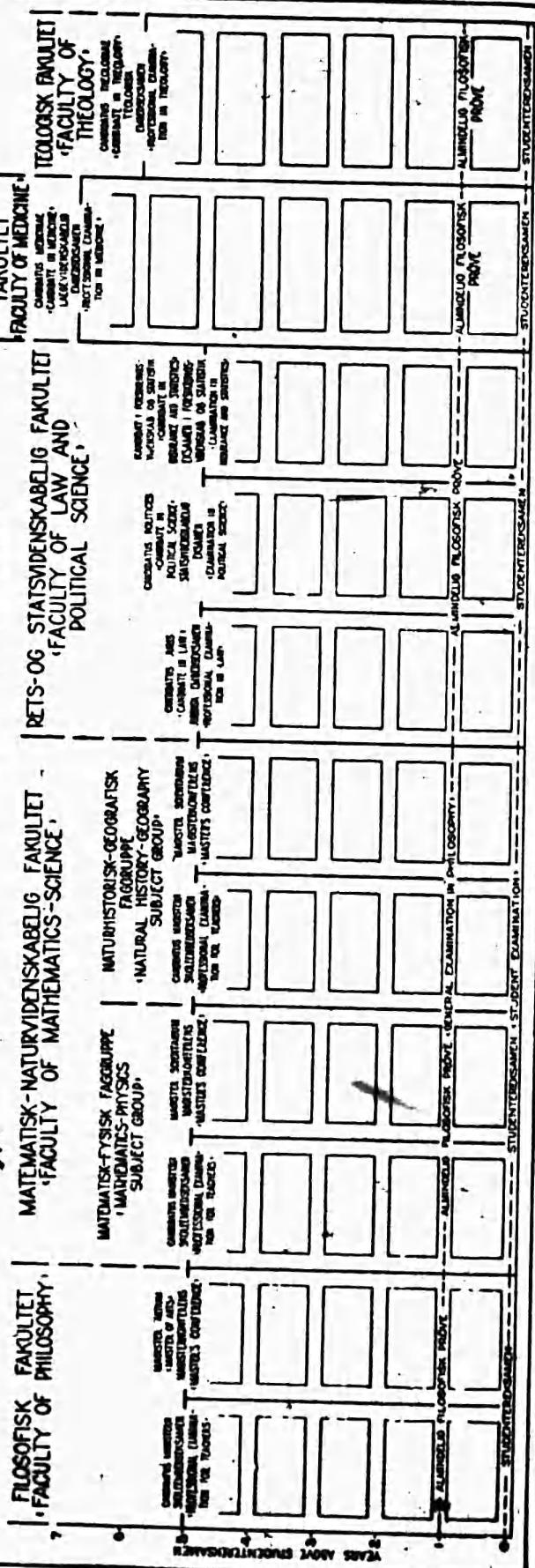
The highest authority within the university is the faculty council composed of all of the professors, Docenter (instructors), and Lektorer (lecturers) of the university.

The consistory consists of 20 members, 15 of whom are elected for a 4-year period by the faculty council from among its members and 5 of whom are the deans of the various faculties. In addition, unless they already are consistorians, the rector, the assistant rector, and the administrator are members *ex officio*; as is also an ex administrator for 2 years after the expiration of his duties as administrator.

The rector and the administrator are elected by the faculty council, the former for a 1-year and the latter for an 8-year period. Anyone who has been a member of the consistory for 1 year is eligible for the position of rector. The administrator must be selected from the faculty of law and political science.

# KØBENHAVNS UNIVERSITET 'UNIVERSITY OF COPENHAGEN'

## ORGANIZATION OF INSTRUCTION



Graph II

By royal statute the university is charged with the obligation to conduct scientific research and instruction; and to offer the examinations and opportunity for the preparation for the examinations assigned it, which, according to law and regulations, are necessary for certain professional appointments and for the practice of certain activities. For the fulfillment of this charge the instructional staff is divided into the five faculties listed below, each of which is under the direction of a dean selected annually (Graph II, p. 8):

- Det filosofiske Fakultet (the faculty of philosophy).
- Det matematisk-naturvidenskabelige Fakultet (the faculty of mathematics-science).
- Det rets og statsvidenskabelige Fakultet (the faculty of law and political science), also called (the faculty of law and economics).
- Det lægevidenskabelige Fakultet (the faculty of medicine).
- Det teologiske Fakultet (the faculty of theology).

*Studieplaner (study plans).*—Each faculty organizes the courses of instruction within the faculty and prepares plans of study in accordance with the royal regulations governing the various examinations it offers. These plans of study generally contain the examination regulations or portions of them with which the student should be familiar; the subjects of instruction with the requirements for each; and such general information as will help to guide the student, especially during the early part of his course.

*Academic year.*—The academic year consists of two semesters; a fall semester from September 1 to December 22, and a spring semester from February 1 to June 9.

*Requirements for admission.*—The standard requirement for admission to the University of Copenhagen is for a man or woman to be of good character and to have bestaaet den danske Studentereksamen (passed the Danish student examination) or an equivalent Danish examination. In addition, admission may be granted:

1. By the consistory to one who previously has matriculated as a student at a foreign university provided the matriculation at the foreign university was not based on a Danish examination which would not qualify for admission to the University of Copenhagen.
2. On the recommendation of the consistory by the Ministry of Education to one who has passed en udenlandsk

Studentereksamen (the student examination of a foreign country) but who has not matriculated at a foreign university.

In the two last-named instances, admission may be granted on condition that in case of lack of room Danish students be given precedence, or admission may be limited to the study of certain fields only.

Admission to the university regularly qualifies one for permission to take its examinations after fulfillment of the requirements of the examination in question. This general rule, however, is limited in the three instances named below:

- (a) A foreigner may be admitted to the university without the right of examination.
- (b) A citizen of Denmark who has been admitted to the university under regulation no. 1 or no. 2 must present, at the time of his first application for permission to take an examination or part I of an examination, a certificate of having passed a special examination provided by the Ministry of Education or a certificate from the Ministry of Education showing that he has been excused from such examination. The special examination includes Danish, the history of Denmark, and sociology.
- (c) In the case of an examination taken at the close of the first year, as, for example, the general philosophical examination, the applicant for the examination may be accepted on condition that the candidate present the certificate mentioned in (b) before the time of the general philosophical examination.

Women have been admitted to the university as students since 1875.

*Examinations.*—For fulfillment of the charge with reference to affording opportunity for the preparation and taking of certain examinations, each faculty offers an Embedseksamen or professional examination. The Embedsekaminer in law, medicine, and theology are self-explanatory; the Embedsekaminer in the faculties of philosophy and mathematics-science are examinations qualifying for teaching positions in the gymnasium. The Eksamens for Embedslaeger (civil-service examination for physicians—see p. 48) and the Eksamens i Forsikringsvidenskab og Statistik (examination in insurance and statistics—see p. 41) are among other professional examinations offered. In addition to the professional examinations, there are the three Magisterkonferenser offered by the faculties of philosophy and mathe-

matics-science; and the general philosophical examination (see p. 12) which is merely a preliminary examination required of all regular students.

Each examination offered by the university is arranged by the faculty concerned in conformity with royal regulations and is conducted regularly by an instructor with the assistance of two censors.

An examination includes two or three parts, each of which must be completed in the regular order. Reexamination is permitted, but a student may not present himself for the same examination more than three times and at least 1 year must pass between each attempt except in the case of the general philosophical examination, a number of supplementary and special examinations, and the preliminary part of the Embedseksamen in medicine, and in the natural history-geography subject group in mathematics-science, in which there may be a reexamination after one-half year. The examinations are written and oral; in some instances as in the examination in medicine, a practical part is added. The examination regulations ordinarily contain detailed instructions for grading. In general, a separate mark is given by each censor and by the instructor for the written and oral *Prøve*\* (examination or test) in a subject. The average of these individual marks is the subject mark and forms the basis on which the final mark for each examination is obtained.

In evaluating the written part of an examination consideration is given not only to information concerning subject matter but also to clearness, organization, and to the grammatical construction of the language used.

The fee for an examination or a part of an examination is paid at the time of registering for the examination. The fees vary in amount. Thus the fee for the general philosophical examination is 6 kroner; for the Embedseksamen in mathematics-science, 24 kroner; in law, 10 kroner for each of the three parts; in medicine, 6 kroner for the preliminary examination, 40 kroner for part I, and 20 kroner for part II.

\* Throughout this study, the term "test" is applied to the written, oral, or practical examination in a single subject; the term "examination" to the large comprehensive examination including the individual subjects.

\* One krona at present is 0.4537 cent in the coinage of the United States.

**DEN ALMINDELIGE FILOSOFISKE PRØVE (THE GENERAL EXAMINATION IN PHILOSOPHY)**

Before a student may present himself for one of the Embed-seksaminer (professional examinations) of the university, including the statsvidenskabelige Eksamen (examination in political science) and the Eksamen i Forsikringsvidenskab og Statistik (examination in insurance and statistics), or to a Magisterkonferens (master's conference) he must pass the general examination in philosophy. This consists of an oral examination based on a two-semester course of 4 hours of instruction per week in introduction to philosophy and is taken regularly at the end of the first year of study after passing the Studentereksamen. However, when the Studieplan (study plan) of a faculty prescribes that part of one of the examinations mentioned above be given at the close of the first year of study at the university, the general examination in philosophy may be postponed to the first examination period following that in which Fagprøven (the subject examinations or tests) are given.

To pass the general examination in philosophy, the student must receive one of the following listed marks:

Udmaerket godt.....	Excellent.
Meget godt.....	Very good.
Godt.....	Good.

A student who has passed the general examination in philosophy at the University of Reykjavik in Iceland is exempt from this examination at the University of Copenhagen as is also a student who can show to the satisfaction of the faculty that he has passed elsewhere an equivalent examination.

The following section is a brief summary of the degrees conferred and the examinations offered by each of the five faculties of the University of Copenhagen.

**DET FILOSOFISKE FAKULTET (THE FACULTY OF PHILOSOPHY)**

**DEGREES IN PHILOSOPHY**

The degrees granted by the faculty of philosophy are: *Candidatus (candidate) magisterii* usually written "cand. mag.", requires about 5 years of study beyond the Studen-

tereksamens and success in the Skoleembedseksamen (professional examination for teachers).

*Magister artium* (*master of arts*) usually written "mag. art.", requires about 5 years of study beyond the Studenteresamen and success in an examination called Magisterkonferens.

*Den filosofiske Doktorgrad* (*doctor philosophiae*) *doctor of philosophy* usually written "dr. phil.", may be attained by a cand. mag. who has received at least förste Karakter (first mark) in his Skoleembedseksamen or by a mag. art. after the satisfactory production of a thesis based on personal investigation of a subject covering some phase of the candidate's major field of study and generally also after public defense of his thesis.

#### EXAMINATIONS IN PHILOSOPHY

The faculty of philosophy offers two main examinations, the Skoleembedseksamen and the Magisterkonferens. In addition, there are Tillaegspröver (supplementary tests) and mindre Pröver i Hjælpefag (lesser or minor tests in assisting subjects) but these are always subsidiary to the two examinations of the faculty.

*Skoleembedseksamen* (*professional examination for teachers*).—To be eligible for the professional examination for teachers in the faculty of philosophy one must have bestaaet Studenteresamen (passed the student examination) and the general philosophical examination. In addition, one who has passed the Studenteresamen in the mathematics-science line must pass a supplementary examination in Latin; and one who selects Christianity as a major and who has passed the Studenteresamen either in the mathematics-science or the modern-language line must pass a supplementary examination in each of Latin and Greek.

The subjects of the Skoleembedseksamen with a brief summary of the requirements for each are given below:

(a) Danish, as a major:

Thorough mastery and knowledge of modern Danish, written and oral. History of the development of the language and knowledge of the distinctive features of its main dialects. History of literature in connection with the outstanding phases of the history of Nordic literature corresponding in content to a 6-semester lecture course of 2 hours per week.

Modern Danish grammar. Phonetics. Reading of assigned literature. Reading and speaking knowledge of Swedish including grammar and literature. Old Icelandic grammar and literature. History of Norwegian and knowledge of the characteristics of Rigsmaal and Landsmaal. Special study of some particular phase of the subject.

Danish as a minor:

Practical mastery of oral and written Danish. History of the language and of its literature. Grammar. Phonetics. Reading of assigned literature. Reading and speaking knowledge of Swedish. Old Icelandic.

(b) German as a major:

Practical mastery of the written and spoken language. Grammar. Phonetics with particular attention to the difference between Danish and German sounds. Survey of old German and the development of modern German. History of literature. History and geography of Germany with special reference to the requirements in these subjects in the Studentereksamen. Germany of today from the spiritual and sociological viewpoint.

German as a minor:

The same phases as in the major but covered less intensively.

(c) English as a major:

Ability to make practical use of the spoken and written language. History of the development of the language and of its literature. Phonetics. Critical philological method. Social and political conditions in modern England. Assigned reading for careful study of the works of old English, middle English, and modern English authors. Assignments for more rapid reading of literature from various periods since 1550. Special study of some particular phase, period, author, etc.

English as a minor:

Skill in the use of the language and knowledge of its history, grammar, and phonetics. History of literature after 1550. Social and political conditions in modern England. Assignment of reading for careful study and for more rapid reading of literature from various periods since 1550.

(d) French as a major:

Thorough knowledge of modern French and of the history of the development of the language. Practical skill in the use of the language in writing and speaking. Ability to understand readily a not previously read text written by an author since 1600. Grammar. Phonetics. History of the language and of its literature. History and sociological conditions of modern France. Special study of an author, a period, or of the development of some particular phase of the language.

## French as a minor:

Ability to make practical use of the language. Knowledge of phonetics, grammar, and of the history and sociological conditions of modern France. The place in the development of literature of the works of assigned authors.

## (e) Latin as a major:

Thorough and comprehensive grammatical and lexical knowledge of Latin during its two outstanding literary periods. Grammar, especially syntax. History of the language corresponding to that acquired in a 2-semester course of 3 hours per week. Brief systematic survey of ancient history, antiquities, and history of literature. The latter corresponding to a 1- or 2-semester course of up to 3 hours per week. Mythology. History of ancient art equivalent to a 1-semester course of 3 to 4 hours per week. Special study of an author, a group of authors, or of some phase of one of the above topics.

## Latin as a minor:

Thorough knowledge of the grammar and general vocabulary. Brief systematic survey of ancient history, antiquities and history of literature. Mythology. Familiarity with the works of a number of modern philologists.

## (f) Greek as a major:

Knowledge of the language and of its grammar the same as for Latin as a major. History of literature corresponding to a 2-semester course of 3 hours per week. History of religion. Special study the same as for Latin.

## Greek as a minor:

Thorough knowledge of Greek grammar and familiarity with the most important rules of syntax. Ancient history, antiquities, and history of literature.

## (g) History as a major and minor:

1. World history with a brief ethnological introduction. More intensive study of Nordic history especially that of Denmark. Emphasis on social history.

2. Theoretical and practical knowledge of historical research and the methods of research.

3. Sociology and social economics on the basis of political geography with special reference to conditions in Denmark and in the other northern countries.

4. Reading of nine primary historical sources (descriptions or smaller groups of documents) which will be of special value as illustrative material in instruction.

## History as a major requires further:

5. The main chronology, diplomacy, and outstanding points of general constitutional law and common law.

6. Reading of at least 65 pages (about 2,000 letters per page) of various Latin historical writers of the Middle Ages.

7. Reading of at least 15 significant works or writings of outstanding historians since 1800. This reading to be related as closely as possible with the source material mentioned in section 4. English, German, and French authors are to be read in the original language.

8. A special study dealing with some period or some political, economic, social, or spiritual development in the history of Denmark or of the North.

**History as a minor:**

1. Acquiring of a thorough mastery of world history, Danish, and Nordic history, and of sociology to a degree parallelling that of the books used in these subjects in the gymnasium.

2. Reading of 10 lesser historical works of source material or of modern authors which treat of events or personalities included in the instruction of the Mellemskole.

3. Bibliographical knowledge which will enable the examinee to find without difficulty information needed for instruction in the gymnasium.

**(h) Christianity:**

Old and New Testament, church history, dogmatics, ethics with philosophy of religion, and history of religion.

**(i) Gymnastics:**

Anatomy, physiology, and theory of gymnastics. One year of training at the National Gymnastic Institute.

**(j) Song:**

Speech and song, theory of speech and song, theory of music, history of music, instrumental music (violin and piano).

The Skoleembedseksamen includes two of these subjects of which one shall be studied as a major and the other as a minor. With the exception of Christianity, gymnastics, and song, which can be used as minors only, each of the subjects may be used either as a major or a minor. The student is free to make any combination of subjects except that if Latin is selected as a major Greek must be the minor, but not vice versa. Latin and Greek may be studied on an equal basis. When such is the case, they constitute a single unit of classic philology and no minor is required.

With the consent of the Ministry of Education a student may elect Latin as a major with Christianity as a minor, in which case Greek, somewhat lessened as to requirements, is included in the oral examination in Latin and affects the mark received for that subject.

In addition to the two required subjects of the Skoleembeds-eksamen supplementary tests in any one of the other listed subjects may be included.

In the major subject a Speciale (special study generally including a thesis) is to be selected for more intensive study of sources and scientific literature. The special study may include one or more naturally related phases or fields of such nature, however, that they may be applicable in teaching. Beyond this the study may be of narrower or wider scope. It should be selected with the advice of the university instructor concerned and work on it should begin normally during the second year of preparation for the Skoleembeds-eksamen.

When the major subject is a language the student must acquire skill in the use of philological aids. He must obtain a general idea of the history of the development of the language and of its literature and a more thorough knowledge of the works reported as read including information about the authors and their place in the history of the literature of the language and the cultural conditions touched upon.

The Skoleembeds-eksamen is offered twice a year. It is conducted by the instructors of the subjects concerned. Thus the examination in Christianity except in the history of religion is in charge of the faculty of theology, and that in theoretical gymnastics in charge of one or more instructors in the faculty of mathematics-science.

With the exception of the examination in the special study which is written only and which may be taken earlier, the entire examination is taken within one examination period.

The written examination in the major consists of answering under supervision Hjemmeopgaver (home themes), større Opgaver (larger themes or propositions), and mindre Opgaver (lesser themes or propositions). The home themes are answered at a time decided through consultation with the instructors concerned and are not to require more than 3 weeks of the student's full time. The larger propositions are to be answered within 10 hours and the student may have the use of such aids as the regulations of the faculty allow. The lesser propositions are to be answered within 4 hours and without the use of aids. The written examination in the minor subject consists of answering lesser propositions only.

The student is eligible for the oral examination only after showing in his written examination that he possesses sufficient

maturity and information. With the approval of the censors for the examination such parts of the examination material as have been satisfactorily covered in the written examination may be omitted in the oral examination. In gymnastics there is an oral examination only.

In grading, the following listed marks with the indicated numerical values are used:

ug (excellent) -----	10	tg (pretty good) -----	1
mg (very good) -----	7	mdl (fair) -----	+2
g (good) -----	4	slet (poor) -----	+5

A plus in connection with the above marks adds one point while a minus subtracts one point. The Fagkarakter (subject mark) is the average of the marks given in each subject by the censors. The Hovedkarakter or final grade for the examination is the sum of the subject grades and is expressed on the basis of its numerical value by one of the following terms:

136 Første Karakter med Udmaerkelse (first mark with distinction).

88 Første Karakter (first mark).

64 Anden Karakter (second mark).

To pass the Skoleembedseksamen requires a total of 64 points, 40 in the major and 24 in the minor. If the student should fail in one of the subjects of his examination he must retake the entire examination unless the faculty grants that he may be excused from reexamination in the special study.

One who has passed the Skoleembedseksamen or the Magisterkonferens in the faculty of philosophy may take a supplementary examination fulfilling requirements equivalent to those of a minor subject in certain other subjects of the faculty which without being Skolefag (school subjects) have a closely related practical use such as Russian, the language of Greenland, general literature, history of art, and psychology.

One who has passed the Skoleembedseksamen may take one or more mindre Prøver i Hjælpefag (lesser tests in supporting or assisting subjects). Such tests may be taken in Danish, German, English, French, Latin, and history; or in other subjects approved by the Ministry of Education. The student may take these tests together with those of his Skoleembedseksamen but if he should fail in the Skoleembedseksamen he must retake the entire examination.

eksamen the tests in the assisting subjects are disregarded even if passed.

Censors for the Skoleembedseksamen, for the supplementary tests and for the tests in the assisting subjects are appointed for a term of 3 years by the Ministry of Education after consultation with the chairman of the censors and with a representative of the faculty of philosophy, in Christianity also with a representative from the faculty of theology, and in gymnastics with a representative from the faculty of mathematics-science.

In theoretical and applied psychology an account of a psychological experiment performed during the period of study is substituted for the laboratory theme or proposition.

Part II of the Magisterkonferens is a videnskabelig Modenhedsprøve (scientific maturity examination) and should begin within 6 months after the completion of part I. It consists of a større skriftlig Opgave (larger written theme) in the special study to be answered within a period of 4 to 8 weeks with the use of any necessary aids, and of an offentlig Forelaesning (public lecture) on an assigned subject with 2 to 8 days of preparation.

If the student does not show in part I of the examination such maturity and general information in his field as would correspond with receiving a mark of *første Karakter* in an Embedseksamen he will not be permitted to take part II of the conference, nor will he be allowed a reexamination in part I until after a period of 1 year.

If the written theme in part II is not entirely satisfactory as a whole but does evidence good information in the main essentials, and scientific ability, the faculty on the recommendation of the instructors in charge of the examination may permit the student to answer a similar proposition, the earliest one-half year and the latest 1 year, after the first attempt without having to retake part I.

The public lecture is to be given as soon as possible after the completion of the written theme. In a Magisterkonferens in English, German, or French, it is customary for the faculty to ask that the public lecture be given in the language of the conference.

*Magisterkonferens (master's conference).*—In addition to the Skoleembedseksamen the faculties in philosophy and mathe-

matics-science each offer a Magisterkonferens leading in the former to the degree of Magister artium (master of arts) and in the latter faculty to the degree of Magister scientarium (master of science). To pass the Magisterkonferens the student must show that he has at least such degree of information and maturity as is required for the attainment of *første Karakter* in the Embedseksamen.

The Magisterkonferens is a purely scientific examination. It gives no opening to a profession, but one who has passed it is eligible to work for the doctorate in the faculty in which the conference was passed.

The Magisterkonferens in the faculty of philosophy includes an entire Videnskabsgren (scientific branch of knowledge) and the Speciale or special study selected by the candidate for intensive first-hand research and study must be approved in each instance as to scope and other requirements by the faculty. In each individual case also the faculty selects those of its members who are to be in charge of the examination.

The Magisterkonferens consists of two parts. Part I is a Kundskabsprøve (information examination) including written and oral tests covering the principal parts of the field of the conference. The written examination consists of a theme or proposition to be answered at the philological-historical laboratory within a period of 10 hours with access to aids, and of two or three lesser propositions to be answered within 4 hours each without the use of aids.

The results of the examination are indicated simply by bestaaet (passed) or by ikke bestaaet (not passed). When a Magisterkonferens has been passed there is no reexamination. When the Magisterkonferens is not also an Embedseksamen censors from outside of the faculty are not necessary.

One who has passed a Magisterkonferens in classical philology has the same rights as one who has passed the Skoleembedseksamen in classical philology.

One who has passed a Magisterkonferens in a subject which may be used as a major in the Skoleembedseksamen in the faculty of philosophy may attain the rights of one who has passed the Embedseksamen by substituting his Magisterkonferens for one of the subjects of the Skoleembedseksamen and passing an examination either as a major or a minor in

one of the other subjects of the Embedseksamen. This applies also to one who has passed a Magisterkonferens in a subject not included as a major in the Skoleembedseksamen but which the faculty may decide corresponds in extent and content to such a subject.

\* One who has passed a Magisterkonferens in the faculty of philosophy in a subject which can serve neither as a major nor as the equivalent of a major subject may take the examination arranged for the Skoleembedseksamen in a single subject, either as a major or a minor, and if the examination is passed receive a Bevis (certificate), but does not attain the rights of the Skoleembedseksamen. He may, however, take the tests in the assisting subjects.

In the faculty of philosophy the Magisterkonferens is offered regularly in the following listed subjects:

Nordic philology	Comparative philology
Icelandic	History
German (with the language of the Netherlands)	General and comparative history of literature
English	History of religion
French	Classical archeology
Classical philology	Prehistoric archeology
Slavic philology	History of art
Semitic philology	Science of music
Egyptology	Philosophy
Theoretical and applied psychology	

A general idea of the requirements for a Magisterkonferens and for a Magisterkonferens in a language or language group in particular may be obtained from the following summary of the requirements for the Magisterkonferens in Nordic philology:

#### *Nordic philology*

1. Thorough and comprehensive knowledge of the grammar and vocabulary of each of the Nordic languages. History of the development of the language including poetry.

Development of Runic writing in the north and practice in reading manuscripts of the Middle Ages. General history of the Indo-European languages, especially of the Germanic languages. History and comparative language methods. Knowledge of Latin.

History of Old Icelandic literature. Nordic mythology, legendary history, and the history of the literature of the Scandi-

navian countries to the present. Knowledge of cultural conditions and of the outstanding phases of Nordic history which form the background of the literature.

2. Stress is to be laid either on the language or on the literary phase of philology. If the stress is on the language side there should be intensive study of the history of the Nordic languages and their relation to the other Germanic languages, together with an elementary knowledge of an ancient language in addition to Latin outside of the Germanic language group, such as Greek or Sanscrit.  
If stress is on the literary side there should be comprehensive study of Nordic folk literature and cultural history from the most ancient times to the present with special reference partly to the parallel development and influence on each other of the Nordic literatures, and partly to their relation to world history.
3. A not too limited Speciale or special study within the major field based on source material and a thorough knowledge of the scientific literature concerned.

#### DET MATEMATISK-NATURVIDENSKABELIGE FAKULTET (THE FACULTY OF MATHEMATICS-SCIENCE)

The faculty of mathematics-science offers examinations in two subject groups, the matematisk-fysiske Faggruppe (mathematics-physics subject group) and the naturhistorisk-geografiske Faggruppe (natural history-geography subject group). The degrees granted on the basis of corresponding examinations in the two groups are the same.

##### DEGREES IN MATHEMATICS-SCIENCE

*Candidatus magisterii* usually written "cand. mag.", requires in the mathematics-physics subject group about 5 years of study beyond the Studentereksamens and success in an examination called the "Skoleembedseksamen"; in the natural history-geography subject group about 4½ years of study beyond the Studentereksamens for students who have passed this examination in the mathematics-science line and from 5 to 5½ years for those who have passed it in the modern language or classical language line and success in the Skoleembedseksamen.

*Magister scientiarum (master of science)* usually written "mag. scient.", requires in each of the two subject groups of the faculty a period of preparation of at least the same length

as that for the degree of Cand. mag. and success in an examination called "Magisterkonferens."

*Magister scientiarum et candidatus magisterii* may be attained by a cand. mag. who passes a Magisterkonferens in which he may be exempted from examination in the part of the Konferens in which examination already has been passed, or by a mag. scient. who passes supplementary examinations in subjects necessary for the fulfillment of the requirements for the degree of cand. mag.

*Den filosofiske Doktorgrad (doctor philosophiae) doctor of philosophy* usually written "dr. phil." may be attained by a cand. mag. who has passed his Skoleembedseksamen with förste Karakter (first mark) or by a mag. scient. after the production based on independent research of a special thesis approved by the faculty and generally also after success in the public defense of this thesis.

#### EXAMINATIONS IN THE MATHEMATICS-PHYSICS SUBJECT GROUP

*Skoleembedseksamen i den matematisk-fysiske Faggruppe (professional examination for teachers in the mathematics-physics subject group).*—The subjects of the professional examination for teachers in mathematics-science in the mathematics-physics subject group are mathematics, physics, chemistry, and astronomy. The examination consists of For-pröven (preliminary tests), Laererpröven (teaching tests), and Fagpröven (subject tests) all of which may be taken during one examination term or in parts during several examination terms.

The preliminary and the teaching tests include the four subjects of the examination and are the same for all candidates, while the subject tests are confined to special fields within the subject group.

Gymnastics may be included in this examination as a substitute for the subject tests. When this is the case the examination is called *Skoleembedseksamen i Gymnastik* (professional examination for teachers of gymnastics).

*Forpröven (preliminary tests).*—Preparation for the preliminary tests may be completed in 3½ semesters and includes the following listed requirements for each subject:

- (a) *Mathematics.*—Mathematical analysis, analytical plane and solid geometry, infinitesimal geometry, descriptive geometry, rational mechanics.

- (b) *Physics*.—The main sections of physics, mechanical physics, heat, electricity, light.
- (c) *Chemistry*.—Fundamentals of general, inorganic, and organic chemistry.
- (d) *Astronomy*.—Introduction to astronomy, elements of the theory of celestial movements, spherical astronomy.

To be eligible for the preliminary tests the student must present evidence of having completed at the university the following listed courses:

- (a) A 1-semester course of 3 hours per week in geometric drawing.
- (b) A 1-semester course of 3 hours per week in experimental work in physics.
- (c) The collective equivalent to a 3-semester course of 3 hours per week in inorganic qualitative analysis, quantitative analysis (essentially titration), and chemical exercises of a general nature.

This part of the examination includes in each of mathematics and physics two oral and two 4-hour written tests; and in each of chemistry and astronomy one oral and one 4-hour written test. A separate mark is given for each test.

Below is a copy of the schematic plan of study for the preliminary tests taken from the *Studieplaner* of the faculty. It gives the number of *Forelaesninger* (lectures) and of *Eksaminatorier* (examination classes) per week in the various subjects of instruction during each of the 4 semesters. Lectures are indicated by "F" and examination classes by "E."

TABLE 3.—*Plan of study for the preliminary tests*

Subject of instruction	Number of classes per week by semester			
	1	2	3	4
1	1	3	4	3
Philosophy <sup>1</sup>	4	4		
Mathematical analysis F E	6	6	4	13
Geometry F E	3	3		
Drawing exercises	3	3		
Rational mechanics F E	2	3	4	
Physics F	2	4	4	14
Physics E				2
Exercises in physics			13	
Inorganic chemistry F	4			
Inorganic chemistry E	3			
Organic chemistry F		4		
Organic chemistry E	6	6		
Exercises in chemistry			6	
Astronomy F	2	2	1	
	1	2	2	

<sup>1</sup> Preparation for the philosophical examination is included in the training of the first year.

<sup>1</sup> 1/4 semester.

<sup>1</sup> May be taken during an earlier semester.

*Laererprøven (teaching tests).*—Preparation for the teaching tests includes the following listed requirements for each subject which may be completed in 2 semesters:

- (a) *Mathematics.*—Thorough knowledge of the system of elementary mathematics from didactic and scientific viewpoints. Knowledge of the elements of Euclid and of the characteristic old and new books of instruction. The history of the basic mathematical questions.
- (b) *Physics.*—Knowledge of the technics and of experimental instruction in physics; of characteristic elementary textbooks and of the use of instruction of handbooks and of collections of statistical tables. History of fundamental questions in physics.
- (c) *Chemistry.*—Preparation and execution of experiments in the teaching of chemistry. Characteristic elementary textbooks. History of fundamental questions in chemistry. Elementary knowledge of important chemical industries.
- (d) *Astronomy.*—Basic conceptions of astrophysics and stellar astronomy. History of astronomy. Application in simple observations of the principles of propædeutic astronomy.

To be eligible for this part of the examination the student must present evidence of having completed:

- (a) A 1-semester course of 3 hours per week in the technics of physics.
- (b) A 1-semester course of 3 hours per week in experimental instruction in physics.
- (c) A 2-semester course of 3 hours per week in experimental instruction in chemistry.
- (d) A course in sextant observations.

The teaching tests in mathematics consist of a written proposition to be answered within 14 days, and of an oral test; in physics of a practical test to be completed within 8 hours and of a theoretical test which may take the form either of a 4-hour written test or of an oral test. In chemistry there is one oral and one 4-hour written test, and in astronomy one oral test. For each of these, the student receives one mark. The mark for the written proposition in mathematics is doubled.

*Fagprøven (subject tests).*—Preparation for the subject tests begins simultaneously with that for the teaching tests and may be completed within 2 years. The subject tests cover a limited field which may be confined to a single subject or include related phases of various subjects of the group.

Approval of the limitation of the field as well as of a special study within the field must be obtained from the instructors concerned before the work of preparation for the tests is begun.

This part of the examination consists of a written or a practical test based on the special study and to be completed within 4 weeks, a 4-hour written test, and two oral tests. A single mark is given for each test with that for the special study doubled.

*Skoleembedseksamen i Gymnastik (professional examination for teachers in gymnastics).*—The professional examination for teachers of gymnastics is similar to the regular Skoleembedseksamen of the subject group except that gymnastics constitutes the special field of the subject tests. To be eligible for these tests in this examination the student must have passed the preliminary tests and the teaching tests. In addition, he must have completed the etaarige Kursus for Gymnastiklaerere (1-year course for teachers of gymnastics) at Statens Gymnastik Institut (National Gymnastic Institute). From his course at the National Gymnastic Institute the student may omit anatomy and physiology since these courses are included in his training at the university.

The examination presupposes a knowledge of the main features of human anatomy, and of the theory of gymnastics with special reference to the physiology of muscles, muscle work and movements. Also some knowledge of the most important physiological methods and the technics of elementary physiology.

The special study in preparation for these tests is selected from within the theory of gymnastics.

The following listed marks with the indicated numerical value are used in grading the professional examination for teachers in the mathematics-physics subject group:

ug (excellent).....	8	tg+.....	2%
ug+.....	7%	tg (pretty good).....	1
mg+.....	7%	tg+.....	+1%
mg (very good).....	7	mdl+.....	+4%
mg+.....	6%	mdl (fair).....	+7
g+.....	5%	mdl+.....	+12%
g (good).....	5	slet+.....	+17%
g+.....	3%	slet (poor).....	+23

To bestaa Eksamens (pass the examination) the student must receive at least 5 as a Gennemsnitskarakter (average mark) for each of the 3 parts of the examination. Hovedkarakteren or the final grade for the examination is the average of the three marks received in the preliminary, teaching, and subject tests respectively and is expressed on the basis of numerical value in one of the following terms:

Förste Karakter med Udmaerkelse (first mark with distinction)-----	7½ and above.
Förste Karakter (first mark)-----	6 to 7½.
Anden Karakter (second mark)-----	5 to 6.

*Magisterkonferens i den matematisk-fysiske Faggruppe* (master's conference in the mathematics-physics subject group).—The general requirements for a Magisterkonferens in the faculty of mathematics-science are the same as those for a Magisterkonferens in the faculty of philosophy. (See p. 19.) In the mathematics-physics subject group of the faculty of mathematics-science a Magisterkonferens may be taken in mathematics, physics, chemistry, astronomy, and geodesy. The conference consists of two parts known, respectively, as *første og anden Del* (pt. I and pt. II).

Part I of the Magisterkonferens is identical with the preliminary tests of the Skoleembedseksamen of the subject group and to pass it the student must receive an average mark of at least 6. One who has received this mark as an average in the preliminary tests of the subject group may substitute them for part I of the Magisterkonferens when the conference is in a subject of the group.

Part II of the Magisterkonferens includes a Hovedfag (major subject), or a major subject with related Bifag (minor subjects). Within the major a not too limited field of special study is to be selected. In each instance the subject combination and the field of special study are subject to the approval of the faculty. In each instance also the faculty selects those of its members who are to be in charge of the examination.

Part II of the Magisterkonferens consists of a Hovedopgave (major theme or proposition) for which the student is to be allowed at least 4 weeks and the use of necessary aids. This is followed within 6 months by lesser written propositions. The oral examination covers the entire field offered

by the candidate and concludes with an offentlig Forelaesning (public lecture) on an assigned subject with 2 to 8 days of preparation.

With special permission of the faculty a videnskabeligt Arbejde (scientific work) prepared during the period of study may be substituted for the major theme or proposition. In a similar manner the lesser propositions may be replaced wholly or in part by Kursusarbejder (work prepared in courses).

A student who has passed part I of the Magisterkonferens and who in answering the major theme or proposition has shown himself to possess sufficient maturity and information, but who otherwise has not quite met the requirements of the faculty may, on the recommendation of the instructors in charge of the examination, be allowed an extension of time not to exceed 1 year after answering the last lesser proposition within which to retake part II of the conference without having to answer a new major proposition.

When a cand. mag. who has received a final mark of *første Karakter* for his Skoleembedseksamen in one of the two subject groups of the faculty wishes to take a Magisterkonferens the faculty may grant that he be given credit for the part of the conference which corresponds to work already covered by examination.

A mag. scient. may attain the same rights as one who has passed the Skoleembedseksamen in the subject group to which his Magisterkonferens belongs by passing a supplementary examination including the subjects in which the conference did not fulfill the requirements of the Skoleembedseksamen.

A Magisterkonferens may be taken also in insurance mathematics with statistics, national economics, Danish civil law, and law governing insurance as minor subjects. The regulations governing this examination are the same as those governing the regular Magisterkonferenser of the faculty, except that the requirements in the minor subjects are determined after consultation with the faculty of law and economics. The latter also selects from among its instructors those who are to assist in conducting the Magisterkonferens.

## EXAMINATIONS IN THE NATURAL HISTORY-GEOGRAPHY SUBJECT GROUP

*Skoleembedseksamen i den naturhistorisk-geografiske Faggruppe (professional examination for teachers in the natural history-geography subject group).*—The subjects of the professional examination for teachers in mathematics-science in the natural history-geography subject group are botany, zoology, physiology, geology, and geography. The examination consists of two parts preceded by a *Forberedelseseksamen* (preliminary "literally preparatory" examination).

*Forberedelseseksamen (preliminary examination).*—The preliminary examination consists of an examination in chemistry and physics similar in content to the preliminary examination in medicine in each of these subjects. (See p. 44.) The examination in chemistry is based on a one-semester course of 3 hours of instruction per week in each of qualitative analysis and of exercises in general chemistry; and that in physics on a one-semester course of 3 hours per week in experimental work in physics. The examinations are oral, and to pass the preliminary examination the student must receive a mark of at least "g" in each of the two subjects.

One who has passed his *Studentereksamen* in the mathematics-science line with a mark of at least "g" in physics may be exempt in the preliminary examination from examination in this subject.

*Part I and part II of the examination.*—Part I of the examination includes either botany and zoology or geology and geography; part II, physiology and the subjects not included in part I. Preparation for the examination includes in general the following listed requirements for each subject corresponding in content with respect to the various phases to that presented in the larger general handbooks and textbooks on the subject concerned:

- (a) *Botany.*—Knowledge of the systematism, morphology, anatomy, biology, physiology, and genetics of plants. The more general wild and cultivated plants in Denmark including the preparation of a herbarium of at least 200 wild plants.
  - A 2-semester course of 4 hours per week in plant anatomy.
  - A 1-semester course of 3 hours per week in plant physiology.
- (b) *Zoology.*—A survey of the animal kingdom including anatomy, morphology, systematism, history of development, genetics,

biology, and geographical extension. A more intimate knowledge of northern vertebrate fauna.

A 2-semester course of 4 hours per week in exercises in zootomy.

A 2-semester course of 2 hours per week in exercises in histology.

(c) *Physiology*.—Knowledge of the general physiology of mammals.

A 1-semester course of 2 hours per week in experimental instruction in physiology.

(d) *Geology*.—Knowledge of the most important minerals and rocks and of the main features of dynamic geology, history of the development of the earth and of petrifaction. A more intimate knowledge of the geology of Denmark and of its neighboring countries.

A 1-semester course of 2 hours per week in exercises in the recognition of minerals.

(e) *Geography*.—General geography including astronomic-physical as well as biological geography. Regional geography.

A 1-semester course of 1 hour per week in cartography.

In each subject there is an oral and a 4- to 8-hour written examination for each of which one mark is given. Before the student is ready for part II of the examination he must have completed a 1-semester course of 2 hours of instruction per week in astronomy with a mark of at least "g".

The marks used in grading this examination are the same as those for the professional examination for teachers in the mathematics-physics subject group. (See p. 26.) The Hovedkarakter or final grade is the average of the mark received in chemistry in the preliminary examination and of the 10 marks received in parts I and II of the professional examination.

*Skoleembedseksamen i Gymnastik (professional examination for teachers of gymnastics)*.—Gymnastics may be included in the professional examination for teachers of the natural history-geography subject group as a substitute either for zoology and botany, or for geology and geography; with the omission in either case of physiology. The examination is then called the professional examination for teachers in gymnastics.

With the exception of the substitution of gymnastics for the subjects mentioned above, the professional examination in gymnastics is identical with the regular professional examination of the subject group. The requirements in

gymnastics are the same as those for the professional examination in gymnastics in the mathematics-physics subject group. (See p. 26.)

*Magisterkonferens i den naturhistorisk-geografiske Faggruppe* (master's conference in the natural history-geography subject group).—The regulations governing the Magisterkonferens in the natural history-geography subject group of the faculty of mathematics-science are the same as those for its mathematics-physics subject group.

The Magisterkonferens in the natural history-geography subject group includes one major and two related minor subjects. A student who wishes may combine subjects from the two subject groups of the faculty. In all cases including those in which both subjects belong to the natural history-geography subject group the subject combination must be approved by the faculty.

The subjects which may be used regularly for a Magisterkonferens in this subject group with the requirements for each are listed below:

1. Botany:

- (a) Systematics, morphology, cytology, anatomy, and plant geography including plant ecology. Knowledge of the cryptogamous and phanerogamous plants of general and Danish flora and of the more important Danish plant groups. Botanical technique and systematics. History of botany.
- (b) Physiology of plants corresponding in extent to the contents of a larger textbook on the subject.
- (c) Genetics: Main points of heredity and variation.

Required practical courses:

- |                       |                               |
|-----------------------|-------------------------------|
| Anatomy of plants     | Marine biology                |
| Physiology of plants  | Application of mathematics to |
| Microscopic technique | biological problems           |
| Spore plants          |                               |

Minor subjects: Zoology and geology.

2. Physiology of plants:

- (a) Physiology of plants: Knowledge of the subject corresponding in extent to the content of a larger textbook on the subject. Chemical physiology, physical chemical physiology, history of physiology, and a thorough knowledge of physiological method.
- (b) Zoophysiology: The requirements are the same as those for the Skoleembedseksamen of this subject group.
- (c) Genetics: Main points of heredity and variation.

## Required practical courses:

Chemistry: Quantitative inorganic analysis, organic chemistry and physical chemistry.

Physiology of plants.

Zoophysiology.

Anatomy of plants (including spore plants).

Culture of micro-organisms.

Application of mathematics to biological problems.

Minor subjects: Botany and zoology, with physiology of plants omitted in the former.

## 3. Zoology:

(a) Morphology, systematics, and history of development in connection with extinct animal forms; also knowledge of Danish fauna, habits of animal life, and geographical distribution. History of zoology and zoological technique.

(b) Comparative anatomy with particular attention to vertebrate animals.

(c) Zoophysiology: Fundamentals of human physiology, general and comparative physiology, with special attention to the physiology connected with the field of special study.

(d) Histology and embryology: Cells, simple tissues, histological construction of the various organs, especially of mammals. Embryology in connection with some of the larger animal groups. Microscopic technique.

(e) Genetics: Main points of heredity and variation.

## Required practical courses:

Zootomy	Histology
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Zoological technique	Embryology
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Marine biology	Microscopic technique
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Fresh-water biology	Physiology of plants
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Zoophysiology	Statistics of variation
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Minor subjects: Botany and geology.

## 4. Zoophysiology includes:

(a) Thorough knowledge of human physiology. Physiological chemical foundations of physiology and comparative physiology. History of physiology and physiological method.

(b) Physiology of plants: The requirements are the same as for natural history and geography in the Skoleembedssekamen with more intensive study of a particular phase.

(c) Genetics: Main points of heredity and variation.

## Required practical courses:

Chemistry (the same as for the Magisterkonferens in physiology of plants).

Zoophysiology.

Zootomy.

Physiology of plants.

Microscopic technique.

Minor subjects: Botany and zoology; excluding the physiology of plants in the former.

5. Geology includes:

(a) General and stratigraphical geology with paleontology: Particular attention to the geology and paleontology of Denmark and neighboring countries.

(b) Mineralogy with crystallography and petrography: The requirements are somewhat greater than for natural history and geography in the Skoleembedseksamen.

Required practical courses:

Paleontology.

General geology.

Determination of minerals.

Microscopic determination of crystals.

Microscopic determination of rocks.

Minor subjects: Botany and zoology.

6. Geography includes:

(a) Thorough knowledge of the various branches and aids in general geography, including astronomical geography, cartography, geomorphology, oceanography, climatology, and meteorology, geography of plants and animals, anthropogeography and ethnography. Regional geography and a survey of geographical discoveries and the history of geography.

(b) Geology including paleontology and crystallography.

Required practical courses:

Catalography.

Location of time and place through astronomical observations.

Minor subjects: Botany and zoology.

The requirements for a subject when used as a regular minor are:

1. Botany:

(a) Fundamentals of general botany, physiology of plants, and systematics; with the study of particular forms confined mainly to those of Denmark.

To be eligible for the examination the student must have completed a practical course in anatomy of plants and cryptogams, and in physiology of plants; answered satisfactorily a written proposition; and prepared a satisfactory herbarium of about 200 plants.

2. Zoology:

(a) Fundamentals of general zoology and systematics.

To be eligible for the examination the student must have completed a practical course in zootomy and answered satisfactorily a written proposition.

3. Geology: Corresponding in extent to a textbook on general geology supplemented by a textbook on the geology of Denmark.

Mineralogy with geology, physics, and chemistry as minor subjects may be mentioned also as coming partly under this subject group.

To be eligible for this Magisterkonferens the student must have passed the regular preliminary examination for the Skoleembedseksamen of the subject group and in addition the examination in his minor.

The Magisterkonferens consists of:

- (a) A written Hovedprøve (major examination) for which the student should be granted at least 4 weeks.
- (b) One or more practical tests depending on the requirements of the individual subjects.
- (c) Lesser written 4-hour examinations or tests.
- (d) An oral examination covering the entire field.
- (e) A public lecture on an assigned subject for which the student may have from 2 to 8 days of preparation.

The practical test may be combined with the major examination and either or both may be omitted; the practical test if the student has had published a work showing that he has ability for independent scientific research, and the major examination if he has had published a work showing that he has ability to organize and critically evaluate the literature on the subject.

Preparation for the Magisterkonferens includes also more intensive study of a selected phase of the major subject.

#### DET RETS- OG STATSVIDENSKABELIGE FAKULTET (THE FACULTY OF LAW AND POLITICAL SCIENCE)

##### DEGREES IN LAW AND POLITICAL SCIENCE

The degrees conferred by the faculty of law and political science or faculty of law and economics as it is also called are:

*Candidatus juris* (*candidate in law*) usually written "cand. jur.", requires from 4½ to 5½ years of study beyond the Studentereksamten and success in the juridisk Embedseksamen (professional examination in law).

*Candidatus politices* (*candidate in political science*) usually written "cand. polit.", requires from 4½ to 5½ years of study beyond the Studentereksamten and success in the statsvidenskabelig Eksamten (examination in political science).

*Kandidat i Forsikringsvidenskab og Statistik (candidate in insurance and statistics).*—This degree is obtained after passing the examination in insurance and statistics. The regulations governing this examination are in the main the same as those for the Embedseksamen in law.

*Den juridiske Doktorgrad (doctor juris) doctor of law* usually written "dr. jur.", may be attained by a cand. jur. or by a cand. polit. after the production and public defense of a thesis based on personal research of a subject covering some phase of the candidate's major field of study.

#### EXAMINATIONS IN LAW AND POLITICAL SCIENCE

*Juridisk Embedseksamen (professional examination in law).*—Instruction arranged by the faculty in preparation for the Embedseksamen in law includes, in addition to lectures and practical work, Universitetsmanuduktionen (university coaching or tutoring). This is offered in the various subjects of the examination for the advantage of students who wish to have their study lightened and accelerated. In its study plan, however, the faculty discourages the continual use of Manuduktörer (tutors) on the ground that it may weaken the student in the development of independence and maturity.

The Embedseksamen in law consists of three parts. Parts II and III may be included in one examination, or there may be an intervening period of 1 year between each of the two parts.

*1ste Del (part I).*—Preparation for part I of the examination may be completed within 1½ to 2 years. It includes during the first semester a study of civil law, constitutional law, and national economics; during the second semester a continuation of the two latter and the beginning of administrative law; while the third semester is devoted to a study of common law and the completion of administrative law.

The examination consists of answering in writing concrete and abstract questions in each of civil law, constitutional law, and common law, and of an oral examination in each of the subjects of this part of the examination.

*2den og 3die Dele (parts II and III).*—Preparation for parts II and III may be completed within 3 or 3½ years after the completion of part I. Since part III must be taken

within 1 year after part II, it is necessary to study a considerable part of the subjects of part III before taking part II of the examination.

Part II of the examination includes:

- (a) Division I of Danish private law consisting of personal law, family and inheritance law, and the main points of international and intertemporal private law.
- (b) Danish criminal law.
- (c) History of law, or Roman law.

The examination consists of answering, in writing, concrete or abstract questions in Danish private law and Danish criminal law, and of an oral test in each of the three subjects of this part of the examination.

Instead of an examination in one of the optional subjects, history of law or Roman law, a student may write an Af-handling (thesis) based on independent work covering some phase of a subject included in any one of the three parts of the examination, approved by the instructor concerned, and requiring from 2 to 3 months of the students' undivided attention. If the thesis is not satisfactory, the student may take the usual examination in one of the optional subjects. When a thesis is based on a subject included in part III of the examination the faculty may grant permission for the thesis to be handed in after examination in the required subjects in part II. Should the thesis then fail of acceptance, the student may include one of the optional subjects from part II in his examination in part III.

Part III of the examination includes:

- (a) Division II of Danish private law consisting of law concerning ownership, law concerning claims or debts, law governing associations, and maritime law.
- (c) Danish administration of justice.

The examination in part III consists of an oral test in each of the two subjects and of answering, in writing, three propositions, one of which shall be a theoretical question based on a main section of the law concerning ownership and claims; one of which shall include concrete or abstract questions from the two subjects of the examination; and the third of which shall be a concrete case involving questions from both divisions of private law, criminal law, and the administration of justice.

Before a student is qualified for examination in part III he must present evidence of having attended court and of having observed the following listed kinds of procedure:

- (a) At a municipal court on a general court day devoted to civic affairs.
- (b) At the Østre Landsret (East Provincial Court) on a regular court day in preparation for civic matters.
- (c) At the East Provincial Court or at the Maritime and Commercial Court in a civic case.
- (d) A jury case at the East Provincial Court.

The student must present evidence also of having completed successfully a 60-hour course in bookkeeping and accounting and of having passed a 4-hour written examination in the subject before a committee consisting of the instructor in bookkeeping, a member of the faculty of law, and a licensed auditor selected by the Ministry of Education. In this examination the student must evidence information concerning general accounting and familiarity with the most frequently used technical terms in commerce and the most frequently used documents; he must show also that he is able to distinguish between sound and unsound business management through critical examination of the accounts of larger joint-stock companies; and that he can explain the significance of reserve and other funds, of the conditions of profit and risk, and the like. The examination may include also national and communal accounting.

Each of the written propositions in the entire examination is to be answered within 6 hours and without the use of aids except for the statutes. For the solution of the concrete case in part III, the student may have 8 hours and in addition to the statutes he may have the use of textbooks and, with the consent of the faculty, of other literary aids.

In addition to the subjects included in the three parts of the examination instruction is offered also in general law including the main divisions of law. Questions on this may be included in the oral examination of parts II and III.

In grading, the marks used range from 16 as the highest to 0. A separate mark is given by each censor for the written and oral test in a subject. The final mark for each of the two tests in a subject is the average of the individual marks. Fractions less than one-half are discarded, while for from one half to one the next higher number is used. The mark

for each of the written propositions in parts II and III is increased in each case by one-half. In case several of the individual marks in a subject are zero that is to be considered the mark for the subject and the examination cannot then be passed.

To bestaa Eksamens (pass the examination) in part I, the student must receive a total of at least 44 points, and in order to be permitted to take the oral examination in part III he must receive a total of at least 43 points for the written examination in parts II and III.

The Hovedkarakter or final mark for the examination is expressed by one of the following listed terms depending on the total number of points received in the three parts of the examination:

Förste Karakter med Udmaerkelse (first mark with distinction)	Points
	206
Förste Karakter (first mark)	164
Anden Karakter af förste Grad (second mark of the first grade)	150
Anden Karakter af anden Grad (second mark of the second grade)	136

To pass the examination the student must receive a total of at least 136 points.

*Statsvidenskabelig Eksamens* (examination in political science).—The examination in political science consists of two parts. Preparation for part I, which includes the subjects listed below, may be completed in 4 or 5 semesters:

- (a) National economics (theory, politics, and science of finance).
- (b) Danish statistics.
- (c) Danish civil law with more intensive study of special phases.
- (d) Economic history with special reference to that of the nineteenth and twentieth centuries and introduction to sociology with national theories.
- (e) General business economics.

To be eligible for this part of the examination the student must present evidence of having completed successfully a course in bookkeeping and accounting ending with a written examination, and of having participated in six written exercises or in a corresponding discussion or proseminary course in national economics.

The examination in part I consists of a 4-hour written test or examination in each of national economics and Danish

civil law and of an oral examination including the five subjects of the examination.

A separate mark is given for the written test in national economics, while the mark for the written test in civil law is combined with that for the oral test in the subject. The mark for the written examination in bookkeeping and accounting is added to that for the oral test in business economics. A separate mark is given for the oral test in each of the remaining subjects. To pass part I the student must receive a total of at least 62 points.

Preparation for part II may be completed in 5 or 6 semesters after the completion of part I and includes:

- (a) Theory of national economics.
- (b) Theory of statistics.
- (c) Extracts from the policies of national economics.
- (d) Either constitutional and administrative law with law of trade and commerce and the main points of common law, or extracts from the law of Denmark concerning property, according to the decision of the faculty.

A student who has passed an examination in constitutional law may take also an examination in sociology with national theories in which case the requirements in the policies of national economics are lessened.

Before the student is eligible for part II of the examination he must complete also the following listed practical work:

- (a) Laboratory exercises in statistics for which he must receive a mark of at least 10 points.
- (b) Laboratory exercises in national economics which should be completed at least 1 year before the examination unless permission for later completion has been granted by the faculty. For passing, a minimum of 10 points is required.
- (c) Before the beginning of the semester in which he is to be examined, unless some other time arrangement has been approved by the faculty, the student shall hand in a *selvstaendig Afsaendning* (an independently prepared thesis) on a subject in economics, sociology or statistics approved by his instructors. The preparation of this thesis is expected to require at least 3 months.

Part II of the examination consists of an oral test and of a 4- to 6-hour test in each of the four subjects of the examination. The student is eligible for the oral tests only after the acceptance of his thesis and success in his written tests. If the student wishes, he may take the tests in the judicial

subjects one-half year before taking the tests in the remaining subjects.

In grading, the student receives one mark for each of the exercises in statistics, exercises in economics, and for the dissertation. In addition, he receives two marks in the theory of national economics—one for the written and one for the oral test; one mark in statistics consisting of the average of the marks for the written and oral tests in the subject; and one mark for the written test in the policies of national economics. Finally, in constitutional law or in extracts from the law of Denmark concerning property he receives one mark which is the average of the marks for the written tests raised by one-half; and two marks for the oral examination in extracts from the policies of national economics. In case the student elects to take the examination in sociology he receives only one mark increased in value by one-half for the oral examination in extracts from the policies of national economics, but in addition one mark decreased in value by one-half for the oral examination in sociology.

If the student does not obtain a total of at least 165 points, or if he receives 0 in a subject he has ikke bestaaet Eksamens. The same applies to one who does not obtain at least 32 points in the marks for the theory of national economics and for his dissertation.

*Juridisk Tillaegsksamen for Statsvidenskabelige Kandidater (supplementary examination in law for candidates in political science).*—One who has passed the statsvidenskabelige Eksamens (examination in political science) with a mark of laudabilis according to older regulations or with første Karakter according to the present regulations of April 5, 1929, may attain the degree of cand. jur. by passing a supplementary examination consisting of parts II and III of the Embedseksamen in law, with the omission of the optional subjects in part II.

The regulations for grading this supplementary examination are the same as those for grading the Embedseksamen in law except for the changes indicated below in the total number of points required for the final mark:

	Points required
Förste Karakter med Udmærkelse (first mark with distinction)-----	132
Förste Karakter (first mark)-----	105
Anden Karakter af förste Grad (second mark of the first grade)-----	96

A total of at least 96 points must be obtained to pass the examination.

*Eksamens i Forsikringsvidenskab og Statistik (examination in insurance and statistics).*—The faculty of law and political science also offers an examination in insurance and statistics which is governed in the main by the same regulations as the Embedseksamen in law. The examination consists of two parts, each of which is offered twice a year at the regular examination periods. The subjects of part I are:

- (a) Mathematical analysis including analytical geometry.
- (b) Interpolation mathematics, including symbolic arithmetic and numerical differentiation and integration; and computation of interest, including public bonds, general investments, etc.
- (c) Theory of national economics and the main features of economic policies.
- (d) Selected extracts from the statistics of Denmark.
- (e) Danish civil law.

To be eligible for examination in part I the student must have completed the course and passed the final examination in bookkeeping. Under special circumstances the student may be granted exemption from attending the course, but not from the final examination.

Part I of the examination consists of a 4-hour written test in each of the subjects except statistics of Denmark, of two oral tests in mathematical analysis, and of one in each of the remaining subjects.

A separate mark is given for the written and oral test in each subject except in national economics and Danish civil law in each of which only one mark is given for the written and oral tests combined. No final mark is made out for this part of the examination, but in order to pass the student must receive a total of at least 80 points, of which at least 50 must be in mathematical analysis, interpolation mathematics, and interest.

Part II of the examination includes:

- (a) Insurance mathematics (construction and adjustment of mortality tables, estimation of net premiums, gross premiums, premium reserves and repurchase value for insurance on one or more lives, disability insurance, risk, reinsurance, accounting, etc.).
- (b) Study of observation, including the calculation of probabilities, as well as the various methods of observation.
- (c) Selected extracts of national economics (value, credit, banking, exchange, social insurance, and the science of finance).
- (d) Statistics, including theory and the history of the development of statistics and laboratory exercises in the statistics of Denmark.
- (e) Law of obligation (general part and selected extracts of its special part).
- (f) Law of insurance, including the Danish law concerning insurance and the main points of the most important foreign insurance laws.

To be eligible for examination in part II the student must present attestation from the university instructor concerned of regular and successful participation in the exercises in insurance mathematics and statistics corresponding to a 2-semester course of 6 hours of instruction per week. The practical work completed in these exercises is to be taken into consideration in the final evaluation of the examination.

The written examination in part II consists of one 4-hour and one 8-hour Opgave or proposition in insurance; one 6-hour and one 8-hour proposition in statistics; and one 4-hour proposition in each of study of observation, national economics, and in either the general or the special part of the law of obligation.

The oral examination to which the student is eligible only after showing sufficient information and maturity in his written examination consists of an oral test in each of the subjects of this part of the examination.

In grading, the student is given a separate mark for the written and oral test in a subject. However, in each of study of observation and national economics the marks for the written and oral tests are counted as one; the same applies also in the case of the marks for the lesser written proposition and the oral test in statistics.

The marks used in grading this examination are the same as those for the Embedseksamen in law. The Hovedkarakter

or final mark for the examination as a whole is expressed by one of the terms listed below depending on the total number of grade points received in the two parts of the examination:

	Points
Laudabilis et quidem egregie.....	292
Laudabilis.....	234
Haud illaudabilis 1mi gradus.....	210
Haud illaudabilis 2di gradus.....	180

One who receives a total of less than 180 points or one who receives Nul (zero) as the mark for a subject cannot pass the examination.

#### DET LAEGEVIDENSKABELIGE FAKULTET (THE FACULTY OF MEDICINE)

##### DEGREES IN MEDICINE

The degrees granted by the faculty of medicine are:

*Candidatus medicinae* (*candidate in medicine*) usually written "cand. med.", requires at least 7 years of study beyond the Studentereksamen and success in the Laegevidenskabelige Embedseksamen (professional examination in medicine).

*Den medicinske Doktorgrad* (*doctor medicinae*) *doctor of medicine* usually written "dr. med.", may be attained by a cand. med. who has passed his laegevidenskabelige Embedseksamen with a mark of at least *første Karakter* after the production of a thesis based on independent research of a subject covering some phase of his major field and generally also after the public defense of this thesis.

##### EXAMINATIONS IN MEDICINE

*Den laegevidenskabelige Embedseksamen* (*the professional examination in medicine*).—To be eligible for the Embedseksamen in medicine one must have passed the Studentereksamen, in addition one who passed his Studentereksamen in the mathematics-science line and who did not include Latin in his middle school examination must pass the examination in Latin provided for entrance to one of the language lines of the Gymnasium.

The Embedseksamen in medicine consists of three parts, a Forberedelseseksamen (preliminary examination), and parts I and II.

TABLE 4.—*Showing the distribution of subjects by semesters through part I of the professional examination in medicine (based on a 7-semester period of study)*<sup>1</sup>

Examination	Subject	Semester						
		1	2	4	4	5	6	7
		3	4	5	6	7	8	9
Latin	Latin <sup>2</sup>	x						
Den. filosofiske Prøve (philosophical examination).	Philosophy (see p. 16)	x	x					
Forberedelses-Eksamens (preliminary examination).	Physics	x	x					
	Exercises in medico-physics	o						
	Chemistry, inorganic <sup>3</sup>	x						
	Chemistry, organic <sup>3</sup>		x					
	Chemistry, analytical exercises <sup>4</sup>	x	(x)					
	Chemistry, analytical titration <sup>4</sup>	(o)	o					
	Chemistry; general experiments <sup>4</sup>	(o)	o					
	Chemistry, examinations	x	x					
I. Del (part I)	Anatomy	x	x	x	x	x	x	x
	Hospital volunteer service		x	x				
	Physiology		x	x	x	x	x	x
	Physiological chemistry				o	(o)		
	Microscopic anatomy <sup>4</sup>				x	(x)		
	Course in dissection <sup>4</sup>				(o)	o		
	Physiological demonstrations						x	

o—Instruction in the subject is required by law.

(o) (x)—Parentheses indicate that the course is to be taken either during this or the neighboring semester.

<sup>1</sup> Adapted from table given on p. 18 of *Regler for samtl. Studieplan over Fagene til den Laegevidenskabelige Embedseksamen*, issued by the Faculty of Medicine at the University of Copenhagen, 1932.

<sup>2</sup> Course for students of nonlanguage lines.

<sup>3</sup> Lectures on M.T.W.T., 11-12 o'clock. Examinations or quiz sections, 3 hours weekly, 8-9 o'clock daily. Exercises, 2 3-hour periods per week, offered 4-6 days per week, 12-3 p.m.

<sup>4</sup> For lack of room  $\frac{1}{2}$  of the class may take these courses in inverted order.

*Forberedelseseksamen.*—During his first year at the university the student in medicine normally takes up the study of physics, chemistry, anatomy, and philosophy, and—if his line of study at the gymnasium was mathematics-science—Latin. (See table 4.) If he is the graduate of a language line the student must pass also a minor test under the direction of the instructors of the chemical laboratory in order to qualify for practical work in chemistry.

Preparation for the preliminary examination may be completed in 1 year. It includes a one-semester course in medico-physics, and a two-semester course in exercises in chemistry and, in each of lectures in physics and chemistry. To be eligible for the preliminary examination the student must present certificates from the instructors concerned showing that he has completed successfully the exercises in medico-physics, the course in titration, and in general exercises in chemistry.

The preliminary examination consists of an oral test or examination in each of physics and chemistry and of a practical test in the latter. The practical test is to be completed within 8 hours with a written account of the work and its results. No written or printed aids are to be used. One mark is given for each of these tests. The mark for the preliminary examination is the average of the marks received in the two oral tests and it must be at least seven. The mark in practical chemistry is not included in the final mark but in order to pass the examination it must be at least five.

The practical test in chemistry may be taken separately provided it is taken during the examination term preceding that in which the oral tests are taken.

*1ste Del (part I).*—Anatomy is included in the first year of study in medicine partly because of its extensiveness in content and partly in preparation for the 12 months of continuous Hospital-Volontaer (hospital volunteer) service for which the student should register immediately after passing the preliminary examination.

Preparation for part I of the Embedseksamen in medicine may be completed in five semesters after passing the preliminary examination. It includes a study of anatomy and physiology throughout the entire period, and after the completion of the hospital volunteer service a one-semester course in each of physiological chemistry and microscopic anatomy, and a course in dissection which normally requires at least 1 month of the student's full time.

To be eligible for part I of the examination the student must present evidence from the instructors concerned showing successful completion of the courses in physiological chemistry and dissection. When lack of material has made it impossible to offer the course in dissection the student on the recommendation of the faculty may be excused from this course by the Ministry of Education.

Part I of the examination consists of oral tests in anatomy, physiology, and physiological chemistry or biochemistry. One mark is given for each of these tests with that in anatomy counting double. To pass the examination the marks for part I and the average mark for the preliminary examination must equal together at least  $5 \times 6\% = 32\%$  points.

*2den Del (part II).*—After the completion of part I of the Embedseksamen in medicine, preparation for part II may be

completed in seven semesters. The student immediately begins his clinical studies by participation in clinical pædeutics. Clinical work proper begins with clinical medicine, which is followed in successive semesters by clinical courses in ophthalmology, otolaryngology, epidemic diseases, skin and venereal diseases, psychiatry, and children's diseases.

During the year following the completion of part I the student should complete a one-semester course in each of bacteriology and hygiene. Preparation for part II of the examination includes also study of the theoretical subjects, general pathology, pathological anatomy, and pharmacology as well as lecture courses in theoretical medicine and surgery.

The final year of study in medicine is devoted usually to the completion of the required clinical courses in surgery and the required course in immunity. The work includes also practical instruction in obstetrics and surgical operations, medical and surgical lecture clinics, instruction in legal medicine, and examination classes in theoretical medicine and surgery.

In order to make practical use of his instruction the student is advised to serve for a while, if possible, during vacations as a *tjenestegörande Praktikant* (active practitioner or practi-cant) at the medical and surgical clinics.

Part II of the examination includes:

- (a) A written test in each of pathology, surgery, and medicine.
- (b) A practical test in clinical medicine, clinical surgery, and surgical operations.
- (c) An oral test in each of general pathology, pathological anatomy, legal medicine, surgery, medicine, obstetrics, and pharmacology.

Part II of the examination may be taken in two sections with an intervening period of not more than 1 year. Section I includes general pathology, pathological anatomy, and pharmacology; section II, the remaining subjects.

To be eligible for part II of the *Embedseksamen* in medicine the student must present evidence of successful completion of one-half year of clinical work in each of medicine, surgery, diseases the of skin and venereal diseases, ophthalmology, otolaryngology, epidemic diseases, psychiatry, and children's diseases; also of the courses in bacteriology, hygiene, and immunity. In addition, he must have passed clinical examinations in skin and venereal diseases with special

reference to their diagnosis and treatment, in pediatrics, and in the nursing and care of children, after the completion of the clinical course concerned.

The question or proposition for the written test in each of pathology, surgery, and medicine is selected at a meeting of the faculty and censors from among three questions made out by the professor of the subject concerned. For answering the question the student may be allowed a period of not more than 6 hours.

The oral test in a subject may last up to three-quarters of an hour. Not more than 5 years may intervene between each of the three parts of the examination except that when part II includes examination in both sections at the same time 6 years may intervene between parts I and II.

Each of the three parts of the examination may be retaken, but only in the regular order. Thus if the student has completed examination in part II he cannot retake only part I, nor can he retake only the preliminary examination after completing part I. For a reexamination in the preliminary examination the student must wait one-half year after his first attempt; for a reexamination in parts I and II, 1 year. If more than 5 years have passed between the examination in part I and in section II of part II, part II cannot be retaken without reexamination in part I.

The marks used in grading this examination are listed below with the numerical equivalent for each:

Laudabilis prae ceteris	16
Laudabilis	13
Haud illaudabilis Imi Gradus	8
Haud illaudabilis IIIdi Gradus	5
Non contemnendus	+11
Nul	+22

The Specialkarakter (special mark) for each subject is the average of the 3 marks for the subject given by the examiner and by each of the 2 censors. Hovedkarakteren or the final mark for the Embedseksamen is the sum of the average mark for each of the 3 parts of the examination and is expressed on the basis of its numerical value in 1 of the following terms:

Laudabilis et quidem egregie	18	$\times 14\frac{1}{2}$	= 261
Laudabilis	18	$\times 10\frac{1}{2}$	= 189

$$\begin{array}{l} \text{Haud illaudabilis Imi Gradus} \dots \dots 18 \times 6\frac{1}{4} = 117 \\ \text{Haud illaudabilis IIIdi Gradus} \dots \dots 32\frac{1}{4} + (13 \times 5) = 97\frac{1}{4} \end{array}$$

If the student receives less than 97½ as his Pointsantal (total number of points) he has ikke bestaaet Eksamens (not passed the examination). If a student receives +22 in a test in a subject, he is immediately dropped.

Before a candidate in medicine has the right to practice as an obstetrician he must obtain a saerligt Bevis (special certificate) from the faculty of medicine showing that he has completed in full at the Rigshospital the course in obstetrics for candidates.

*Eksamens for Embedslaeger (examination for Government physicians or civil-service examination for physicians).*—Embedslaeger in Denmark are employed by the Government either as Amtslaeger (county physicians) or as Kredsslaeger (district physicians) and serve as connecting links between the regular physicians, dentists, druggists, and others engaged in medical work, and the Department of Health. Appointment as Embedslaeger is dependent on having passed the civil-service examination for physicians offered at the university.

The examination is conducted by a committee consisting of the university instructors in each of hygiene, legal medicine, general pathology, psychiatry, and venereology; the medical director; the director of the National Serum Institute; also a lawyer or physician as instructor in medical legislation, and a physician as instructor in medical administration and social-hygienic legislation. The last two are appointed by the Minister of Education on the recommendation of the other members of the committee. The committee selects its own chairman who serves in that capacity for a period of 3 years.

To be eligible for the Eksamens for Embedslaeger one must present evidence:

- (a) Of having passed the Embedseksamen in medicine and of having completed the required course in obstetrics at Fodstiftelsen (Obstetrics Foundation).
- (b) Of having completed the 12 months of general hospital routine and either meanwhile or thereafter of having served for at least 3 months at a division for epidemic diseases, approved by the examination committee.
- (c) Of having served for at least 3 months at a division for the mentally defective, approved by the examination committee.

- (d) Of having been engaged in practice in the country or in a small town for at least 3 months.
- (e) Of thereafter having completed a special course in each of hygiene with medical statistics, legal medicine, legal psychiatry, microbiology with epidermology, and the diagnosis and treatment of venereal diseases; and of having had instruction for one semester in medical legislation and in medical administration and social-hygienic legislation.

To these courses which are offered every second year only a limited number of Laeger (physicians) are admitted. At present the number is limited to 15. The selection is based first, on the results of the Embedseksamen in medicine and, second, on seniority.

#### DET TEOLOGISKE FAKULTET (THE FACULTY OF THEOLOGY)

##### DEGREES IN THEOLOGY

The degrees conferred by the faculty of theology are:

*Candidatus theologiae* (*candidate in theology*) usually written "cand. theol.", requires about 6 years of study beyond the Studentereksamens and success in the theologiske Embedseksamen (professional examination in theology).

*Den theologiske Doktorgrad* (*doctor theologiae*) *doctor of theology* usually written "dr. theol.", may be attained by a cand. theol. who has received a grade of *förste Karakter* (first mark) for his Embedseksamen in theology after the production and public defense of a thesis on a self-selected subject based on personal investigation and research of some phase of his major field.

##### EXAMINATIONS IN THEOLOGY

To be eligible for examination in the faculty of theology one must have passed the Studentereksamens. If this was passed in the modern language line the student must pass a *Tillaegspröve* (supplementary examination) in Greek based on a three-semester course; if the student is a graduate of the mathematics-science line he must pass not only the above-mentioned supplementary examination in Greek but also a supplementary examination in Latin based on two semesters of preparation beyond the requirements of the middle school examination in this subject.

In addition to the supplementary examinations the student is required to pass two preliminary examinations; the general

examination in philosophy which is the same for all faculties (see p. 12), and an examination in Hebrew which requires about 1 year of preparation and is taken ordinarily at the same time as the general examination in philosophy.

*Den teologiske Embedseksamen (professional examination in theology).*—Preparation for the Embedseksamen in theology includes the following listed subjects:

(a) Old Testament.

Exegesis (Genesis; Psalms; Prophets; historical literature excluding Genesis and poetical literature excluding Psalms, but including in the former, Daniel, and in the latter, Proverbs, Job, Song of Solomon, Lamentations, and Ecclesiastes).

Minor subjects (Introduction to the Old Testament, history of Israel, theology of the Old Testament, and the optional non-examination subjects, geography of Palestine, and Hebrew archaeology).

(b) New Testament.

Introduction to the New Testament, hermeneutics, and the nonexamination subjects, history of the period of the New Testament, and theology of the New Testament.

(c) Dogmatics and church history.

A brief survey consisting of a 2-semester course of 3 hours of instruction per week, or a more thorough survey consisting of a 4-semester course of 3 hours of instruction per week.

(d) Dogmatics and symbolism.

(e) Moral and religious philosophy.

Christian morality, and philosophy of religion.

Ordinarily the student devotes the first 3 or 3½ years of study in theology to the historical subjects, Old Testament, New Testament, and church history. He then takes up the systematic subjects and normally devotes the fourth year to a thorough study of the systematic subjects and to a review of the historical subjects. Laboratory exercises in the historical subjects may begin during the second year and in the systematic subjects during the third year. The written exercises in theology generally come during the fifth year.

A student who wishes to take advantage of the opportunity to participate in exercises at Pastoralseminariet (the Pastoral Seminary) is advised to do so during his fourth year of study.

The written part of the examination in theology consists of six themes or propositions, one in each of the main subjects of the examination and one either in hermeneutics or in introduction to the New Testament. The proposition in the New Testament is to be exegetical, that in the Old Testament either

exegetical or else pertain to one of the subjects included in the study of the Old Testament.

In any one of the subjects of the examination the student may present for evaluation in connection with the examination a laboratory theme prepared as the result of practical work under the direction of an instructor who is also regularly an examiner at the professional examinations of the faculty. The laboratory theme is to be handed in with the approval of the instructor concerned at least 6 months before the time of the examination.

In connection with his oral examination the student, if he wishes, may specify and eventually be examined in a special phase of one of the subjects of the examination in which he has done supplementary reading provided the designated phase has been approved by the faculty with reference to subject matter and content.

The Embedseksamen in theology may be taken in two parts with an intervening period of not more than one-half year. When this is the case, part I of the examination includes exegesis of the Old and New Testament, church history, and the minor subjects belonging to each of these; part II the remaining subjects.

The marks used in grading this examination are:

*Laudabilis et quidem egregie*—Attained if at least 3 of the 5 Special-karakterer (special or subject marks) are of this designation and each of the remaining 2 marks at least laudabilis.

*Laudabilis*—Attained if at least 3 of the subject marks are laudabilis and 2 not less than haud illaudabilis primi gradus, or if 4 of the marks are laudabilis and 1 is haud illaudabilis secundi gradus. In either case haud illaudabilis may be received in exegesis of the New Testament or in dogmatics only.

*Haud illaudabilis primi gradus*—Attained if 3 of the subject marks are haud illaudabilis primi gradus and neither of the other 2 marks less than haud illaudabilis secundi gradus, however, if haud illaudabilis secundi gradus is received in exegesis of the New Testament or in dogmatics it is necessary to receive laudabilis in 2 of the other subjects. This mark may be attained also with 3 haud illaudabilis secundi gradus when the other 2 marks are laudabilis and 1 of them is in exegesis of the New Testament or in dogmatics.

*Haud illaudabilis secundi gradus*—Requires at least 4 haud illaudabilis secundi gradus with 1 noncontemnendus, or in case of 2 noncontemnendus neither of which may be in the New Testament or in dogmatics, the 3 remaining marks must be higher than haud illaudabilis secundi gradus.

*Non contemnendus*—may be used as a subject mark but not as a Hovedkarakter (final mark) for the examination.

A student has failed to pass the examination if he should receive Nul (zero) as the mark for a subject, if he should receive noncontemnendus in exegesis of the New Testament and in dogmatics, or if he should receive in addition to noncontemnendus in two of the other subjects of the examination a haud illaudabilis secundi gradus.

A candidate in theology who has received a final mark of at least haud illaudabilis primi gradus and who has passed an examination in history of religion corresponding to the tests or examination in this subject in Christianity in the Skoleembedseksamen may attain the rights and privileges of one who has passed the Skoleembedseksamen by fulfilling the requirements of a major subject of this examination. (See p. 13.)

#### DOKTORGRADEN (THE DOCTORATE)

As we have seen, the doctorate may be attained at the University of Copenhagen on the basis of a thesis for the degree in each of the faculties of philosophy, mathematics-science, law, medicine, and theology, by one who has passed with *förste Karakter* (first mark) a final examination offered by the faculty concerned. In addition, in the faculties of philosophy and mathematics-science the degree of doctor may be attained on the same basis by one who has passed a *Magisterkonferens*. It may be obtained also by *Polytekniske Kandidater* who have received a mark of *förste Karakter*. (See p. 57.)

On the recommendation of the faculty concerned, the Consistory may grant permission for the doctorate to be attained by one who through other examinations than the ones mentioned above taken either at the University of Copenhagen or at some other university or by previous scientific work has shown that he is qualified. Before making its recommendation the faculty in each case shall have received the verdict of a competent committee appointed by the faculty to investigate the qualifications of the candidate.

The *Afhandling* (thesis) must be written by the candidate on a self-selected subject, based on independent research, and not previously published. If a thesis is connected closely with previous articles or publications produced by the author,

the latter, if he desires, may submit a copy of such publication or publications to the faculty for consideration together with his thesis.

The thesis is to be written ordinarily in Danish but may be accompanied by a résumé in a foreign language. When under special circumstances a faculty has granted permission for a thesis to be written in a foreign language, generally English, German, or French, the thesis must be accompanied by a résumé in Danish. The faculty may require also a statement from one competent to judge that the language used is satisfactory.

After the thesis on the written recommendation of a carefully selected committee has been approved and accepted by a faculty as worthy of public defense it is to be printed and made public by the author at least 14 days before the defense.

For the public defense two of the members of the thesis committee of which at least one must be a member of the faculty concerned are appointed as official opponents. Academic citizens and Polytekniske Kandidater have the right to oppose ex auditorio and the faculty on request may grant the right to others. Opponents ex auditorio should make arrangements with the chairman before the opening of the defense. Permission may be granted by the chairman to those who apply later but not at the expense of the time of those who made arrangements earlier.

The defense is conducted by the dean or by a professor appointed by the faculty concerned. Each of the official opponents is allowed, generally, 1½ hours and each of the opponents ex auditorio three-fourths of an hour including the time required for answer by the candidate. If the number of opponents permits, the chairman may extend the time for each. The entire public defense is not to last more than 6 hours.

The purpose of the defense is not only to establish that the dissertation is the candidate's own work but also to discover whether or not he possesses the scientific and scholastic foundations which the doctorate presupposes.

After the official opponents have reported to the faculty as to whether or not the defense has been a success the faculty renders its decision as to whether or not the degree shall be conferred.

With the approval of the Consistory a faculty may confer an honorary degree of doctor upon one whom it wishes to honor because of distinguished achievement.

#### UNIVERSITETSUNDERVISNINGEN I JYLLAND (UNIVERSITY INSTRUCTION IN JUTLAND)

The movement for the establishment of a university in Jutland which began about 1880, culminated by the royal regulation of August 8, 1928, in the beginnings of a university by the establishment at Aarhus of Universitetsundervisningen i Jylland. The school is supported in part by the National Government and in part by the Corporation of Aarhus. Its work is under the control of the Ministry of Education acting on the advice of the University of Copenhagen. The local administration is in charge of the Laererforsamling (faculty council) composed of the permanent instructors of the institution.

With the exception of the general examination in philosophy (see p. 12) Universitetsundervisningen i Jylland does not yet have the right of examination but in addition to the instruction in preparation for the general examination in philosophy it offers training leading toward the Skoleembedseksamen and toward the Magisterkonferens in the faculty of philosophy in Danish, German, English, French, classical philology, and history. Training is offered also for the preliminary examination in Greek and the supplementary examination in Hebrew for students in theology but the examinations themselves as in the case of the subjects just mentioned are taken at the University of Copenhagen. There is instruction also in Slavonic philology and at intervals courses have been offered in Flemish, Provençal, and Spanish.

Instruction at Universitetsundervisningen i Jylland is governed by the same regulations as the corresponding instruction at the University of Copenhagen and one who has passed the general examination in philosophy offered at Aarhus has the same rights and privileges in every respect as one who has passed this examination at the University of Copenhagen.

During 1933, the school looked forward to the opening in September of a building of its own and to the beginning of instruction preparatory to the preliminary examination in medicine.

DEN POLYTEKNIKSE LAEREANSTALT, DANMARKS TEK-  
NISKE HÖJSKOLE (THE POLYTECHNICAL INSTITUTE,  
TECHNICAL COLLEGE OF DENMARK)

*General data.*—The Polytechnical Institute, the Technical College of Denmark was founded in 1829. Its purpose is to offer higher technical instruction on scientific foundations and to further the development and the practical use of technical science and the general knowledge for which it is a basis.

The Technical College is under the supervision of the Ministry of Education and under the immediate direction of a rector appointed by royal resolution for a period of 5 years. The rector is assisted by a Laererraad (faculty council), and Undervisningsraad (council of instruction), the Fagraad (departmental faculties), and an inspector.

The faculty council consists of the rector, the inspector of the college, and of all appointed or active professors and instructors. The council of instruction includes the rector and the chairman of the departmental faculties.

Each departmental faculty prepares Studie og Eksamensordninger (study and examination regulations) for the instruction it offers. The normale Studieordninger (normal or regular plans of study) are approved by the faculty council; the normale Eksamensordninger (normal examination regulations) by the Ministry of Education. Deviation from the normal plan of study must be approved by the council of instruction; deviation from the normal examination regulations by the Ministry of Education.

According to the new regulations of February 8, 1933, which became effective September 1, 1933, the academic year begins on September 1. The first part of this discussion (pp. 55-60) is a summary of the main points of the new provisions.

*Requirements for admission.*—To the extent that there is room, instruction is available to a man or woman of good character regardless of whether or not it is taken with the purpose of preparing for an examination; however, preference is given to be to polytekniske Eksaminer, i.e., to those who are registered as polytechnical students.

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An applicant who has passed one of the following listed examinations or groups of examinations may be admitted as a polytechnical student:

- (a) Studenteksamen in the mathematics-science line.
  - (b) Adgangseksamen (entrance examination) to the Technical College of Denmark. Admission to this is dependent on having passed one of the three following examinations:
    - 1. An examination qualifying for admission to the University of Copenhagen.
    - 2. Almindelige Forberedelseseksamen (general preliminary examination) with three foreign languages and with an average of not less than good and with not less than a mark of good in Danish.
    - 3. Realeksamen (real or modern examination) or Pigeskoleeksamen (girls' school examination) with English, French, German, practical arithmetic and mathematics, and geometry.
  - (c) 1. Either the Realeksamen, the Pigeskoleeksamen, or the almindelige Forberedelseseksamen in connection with the Eksamens for Maskin or Elektrokonstruktører (examination for machine- or electro-constructionists in the manner in which this examination is offered at one of the following listed schools:
    - (a) Det Tekniske Selskabs Skoler i København (the schools of the Technical Association at Copenhagen).
    - (b) Odense Maskinteknikum (Machine Technicum at Odense).
    - (c) Aarhus Elektroteknikum (Electro-technicum at Aarhus); or in connection with the udvidede Eksamens for Bygningskonstruktører (extended examination for building constructionists) at one of the following listed schools:
      - (1) Husbygningsteknikum i København (Housebuilding or architectural Technicum at Copenhagen).
      - (2) Husbygningsteknikum i Odense (Architectural Technicum at Odense).
      - (3) Bygningsteknikum i Horsens (Building Technicum at Horsens).
  - 2. Adgangseksamen to the second from the highest department of Officerskolen (School for Officers) passed according to its plan of 1923.
  - 3. Overgangsprøven (promotion examination) at Kadetskolen (School for Cadets) passed according to the decree of August 29, 1929.
- All applicants within this examination group must pass, in addition, an examination in natural and physical science subjects.

- (d) An applicant with training other than that described above must secure the approval of the Ministry of Education on the recommendation of the college.

#### DEGREES

The degrees conferred by the Technical College of Denmark are:

*Polyteknisk Kandidat (candidatus Polytechnices) polytechnical candidate* usually written "cand. polyt.", requires from 4½ to 6½ or 7 years of study after admission to any one of the four departments of the college and success in the Civilingeniöreksamen (examination in engineering).

*Den tekniske Doktorgrad (doctor technices) doctor of technology* usually written "dr. techn.", may be attained by a cand. polyt. who has passed the Civilingeniöreksamen with *förste Karakter* (first mark), by one who has passed an *Embeds-eksamen* at the University of Copenhagen with first mark, or by one who has passed a *Magisterkonferens*, after success in the public defense of a thesis written by the candidate and based on independent research.

#### DEPARTMENTS OF INSTRUCTION

The departments of instruction at the college with the examination offered by each are:

- (a) *Fagafdeling for Kemisk Ingeniörvidenskab* (Department of chemical engineering):  
*Civilingeniöreksamen for Fabrikingeniörer* (examination for chemical engineer).
- (b) *Fagafdeling for Maskinteknisk Ingeniörvidenskab* (Department of mechanical motive-power engineering including shipbuilding):  
*Civilingeniöreksamen for Maskiningeniörer* (Examination for mechanical engineers).
- (c) *Fagafdeling for Bygningsteknisk Ingeniörvidenskab* (Department of civil engineering):  
*Civilingeniöreksamen for Bygningsingeniörer* (Examination for civil engineers).
- (d) *Fagafdeling for Elektroteknisk Ingeniörvidenskab* (Department of electrical engineering):  
*Civilingeniöreksamen for Elektroingeniörer* (Examination for electrical engineers).

In addition to the four departmental faculties of these departments the instructors who offer training in prepara-

tion for part I of the Civilingeniøreksamen form an additional departmental faculty called the Fagraad for de almene Videnskaber (departmental faculty for the general sciences or knowledge). This departmental faculty is in charge of the Studie og Eksamensordninger (study and examination regulations) for part I of the examination. The study and examination regulations for the remainder or part II of the examination are in the hands of the department offering the examination concerned.

Preparation for part I of the examination may be completed in 2 years; for part II, in 2½ years except in electrical engineering where an additional year of practical training is required. In practice, however, the training is extended to 5½ or even 7 years.

The examination includes written, oral, and practical tests. In addition, prescribed Kursusarbejder (work performed in courses) are to be presented for evaluation. To pass the examination the student must receive one of the following marks as the Hovedkarakter or average and final mark: 1ste. Karakter med "Udmaerkelse"; 1ste Karakter; 2den Karakter.

*Supplerende eller videregaaende uddannelse (supplementary or further training).*—With the consent of the curriculum committee there may be organized within each faculty special courses for supplementary or further training. Opportunity for the use of the laboratories and collections of the college for research under the guidance and direction of the instructor concerned may be provided in the same manner. In each case after success in an examination at the conclusion of the work the student may receive a certificate.

Opportunity for supplementary training or research with the object of obtaining a certificate is open to one who has passed the examination for civil engineers at the college but may be extended also to others possessing the necessary qualifications.

The laboratories and other scientific equipment at the college are, insofar as circumstances allow, at the disposal of anyone who wishes to carry on scientific research. In each case, however, the consent of the instructor in charge of the material must be obtained and the consent is not to be granted until the instructor has been satisfied that the appli-

cant is qualified for the research contemplated. The consent is granted also with the understanding that the applicant is responsible for the expenditures incurred through his research.

*Den tekniske Doktorgrad (doctor of technology).*—The degree of doctor of technology may be conferred by the college on the basis of an *Afhandling* (thesis) on one who has passed en af Höjskolens afsluttende Eksamener med förste Karakter (one of the completion examinations of the College with a grade of first mark), or on one who has passed a *Magisterkonferens* or who has received a grade of first mark in an *Embedseksamen* at the University of Copenhagen. (See pp. 13, 19, 23, 27, 29, 31.)

On occasion, on the recommendation of the council of instruction and of the faculty concerned, the faculty council may grant permission for the doctorate in technology to be obtained in a similar manner by a foreigner or by one not included in any of the aforementioned groups when the applicant can produce evidence showing that he has the necessary qualifications as to training and scientific information.

To obtain the doctorate the candidate must produce a thesis based on independent research in some phase of a branch of scientific knowledge related to the work of one of the departments of the college and not previously published. The thesis must be accepted by the departmental faculty concerned and by the faculty council; printed, made public, and successfully defended by the author at a public defense.

The thesis should be written in Danish but may be accompanied by an abstract in English, German, or French. However, when the subject matter, the readers likely to be reached, or financial considerations make it seem advisable, the director on the recommendation of the departmental faculty concerned may grant that it be written entirely in English, German, or French.

On the recommendation of a departmental faculty supported by a majority of at least two thirds of the council of instruction and of the faculty council an honorary degree of doctor of technology may be conferred on one whom the college wishes to honor because of distinctive achievement.

*Regulations of October 25, 1913.*—The regulations governing instruction at the Technical College of Denmark preceding

September 1, 1933, were those of October 25, 1913, with various supplementary regulations or amendments. Under the old regulations there were the same four departments conferring the same degrees as under the new. The examinations offered consisted of two parts with the same length of preparation for each part as under the new regulations. However, the examination offered by each department was called the polytekniske Eksamens (polytechnical eksamen) instead of Civilingeniøreksamen (civil engineers examination), and part I of the examination for chemical engineers differed from part I of the other examinations, while according to the new regulations part I of the Civilingeniøreksamen is the same for all departments.

The following is a brief summary of the polytechnical examinations as offered, according to the regulations in force until September 1, 1933. It includes for each examination the special admission requirements for each part, the subjects in which written, oral, and practical tests were given, the Kursusarbejder or work completed during a course to be submitted for evaluation as a part of the examination, and the number of marks given for each test and Kursusarbejd.

**POLYTEKNISK EKSAMEN FOR FABRIKINGENIØRER  
(POLYTECHNICAL EXAMINATION FOR CHEMICAL  
ENGINEERS)**

*Første Del (part I).*—To be eligible for this part of the examination the student must present certificates from the instructors concerned showing that he has completed the required assignments in connection with practical work in drawing, physics, chemistry, mineralogy, and crystallography.

The examination includes a written test in physics and in mathematics; an oral test in each of inorganic chemistry, organic chemistry, physics, mathematics, and geology; and a 12-hour practical test in inorganic qualitative analysis. In the practical test the student may have the use of handbooks and any other aids permitted by the instructor.

In grading, 2 marks are given for each of the 2 tests in physics; 1 mark for the remaining tests. The mark for the practical test is included with that for the Kursusarbejder performed in the course. One mark is given also for the Kursusarbejder in drawing.

*Anden Del (part II).*—To be eligible for this part of the examination, the student must present certificates from the laboratory instructors concerned showing that he has:

- (a) Completed the exercises and report in physics of the special course for chemical engineers.
- (b) Completed the exercises and report in physical chemistry.
- (c) Completed the exercises and reports in each of the subjects, microscope and pure cultivation of the organism of fermentation.
- (d) Completed the exercises in architectural drawing.
- (e) Handed in before the 15th of the preceding September a design for factory or civil engineering construction either to the technical-chemical or to the biotechnical-chemical laboratory.
- (f) Completed all required chemical exercises at the university and at the Technical College and the Kursusarbejder connected therewith.
- (g) Completed the construction exercises in mechanics and study of machines.
- (h) Completed the exercises in the mechanical laboratory and in the workshop.

The examination includes:

- (a) A 4-hour written test in each of:

Chemistry	Technical mechanics and machines
Biochemistry	Mechanical technology
Technical chemistry	
- (b) An oral test in each of:

Inorganic chemistry	Physical chemistry
Organic chemistry	Mechanical technology
Technical chemistry	Electro-technics
Biochemistry	Technical mechanics and machines
- (c) Practical tests, including a 20-hour quantitative analysis divided between 2 days, and a 12-hour test for the preparation of an inorganic or organic substance.

In grading, one mark is given for each test. Consideration is given also to the following listed Kursusarbejder; and 1 mark for each of the first 3:

- (a) A design for a chemical engineering construction.
- (b) Exercises in technical chemistry.
- (c) Organic qualitative analysis.
- (d) Preparation of an inorganic or organic substance. The mark for this is included with that for the practical test in the subject.
- (e) Construction exercises in technical mechanics and machines. The mark for this is included with that for the oral test in the subject.

**POLYTEKNIK EKSAMEN FOR MASKININGENIØRER  
(POLYTECHNICAL EXAMINATION FOR MECHANICAL  
ENGINEERS)**

*Første Del (part I).*—To be eligible for part I of the examination for mechanical engineers the student must present certificates from the instructors concerned showing that he has completed:

- (a) The exercises in drawing and produced Kursusarbejder consisting of:
  - 1. A geometric or projection drawing.
  - 2. A drawing based on the examinee's own measurement of a machine or similar suitable object accompanied by hand sketches and a partly detailed drawing with tracing.
- (b) The exercises and report in physics.
- (c) The required exercises in chemistry.

The examination includes an oral and a 4-hour written test in each of mathematics, rational mechanics, physics, and chemistry; an oral and a 6-hour written test in descriptive geometry. Two marks are given for each of the two tests in physics and for the written test in mathematics; one mark for each of the remaining subjects.

The drawings mentioned constitute the Kursusarbejder of the examination and for these the student receives two marks.

*Anden Del (part II).*—To be eligible for this part of the examination the student must present attestations from the instructor of architectural drawing, and from the directors of the mechanical laboratory, material laboratory, and electro-technical laboratory of having completed the required exercises offered in the departments under their direction.

He must present satisfactory evidence of having completed the course in exercises in technological shop work, and if his examination project is heating and ventilation construction—the course in technical exercises in this subject.

At least 2 months before the time of the examination he must present a certificate acceptable to the college of having participated in the practical work of a mechanical factory, blacksmith shop, in the setting up of machines, or in larger mechanical construction.

In addition, he must have completed all practical exercises and handed in all required assignments in the following subjects by the 24th of June preceding the examination:

- (a) Heating and ventilation construction.
- (b) Building statics and iron construction.
- (c) Machine construction.
- (d) Shipbuilding unless the examination project is selected in heating and ventilation construction.
- (e) Electro-technics.

Finally, by the first of the preceding November he must have handed in an *Eksamensprojekt* (examination project) selected in connection with the work in machine construction or shipbuilding and worked out under the guidance of the instructor in the same manner as a practical exercise. The work on the project should begin between the 1st and 24th of the preceding June.

The examination includes a 4-hour written test in building statics and iron construction; in mechanical technology; and in one of the subjects, study of machines, heating and ventilation construction, or shipbuilding, depending on the one within which the examination project is included. It includes an oral test in each of:

- Study of materials.
- Heating and ventilation construction.
- Electrotechnics.
- Chemical technology.
- Building statics and iron construction.
- Study of machines.
- Mechanical technology.
- Shipbuilding (not included for those whose examination project is in heating and ventilation construction).

There is an additional oral test in heating and ventilation construction for students whose examination project is in this subject; and an additional test in mechanical technology or in shipbuilding depending on whether the examination project has been selected in heating and ventilation construction, machine construction or shipbuilding.

The 12-hour practical test consists of producing a design for a not too complex mechanical construction.

One mark is given for each test with that in the study of machines counting double. Two marks are given for the examination project and one for the drawings in connection with the various *Kursusarbejder* and the examination project. One mark is given for the *Kursusarbejder* in each of the

subjects of the examination and counts as a separate mark except in the following instances:

- (a) When the examination project is in machine construction or in shipbuilding the mark for the Kursusarbejd in heating and ventilation is included with the mark for the oral test in heating and ventilation.
- (b) The mark for the Kursusarbejd in electrotechnics is included with that for the oral test in the subject.
- (c) A Kursusarbejd in shipbuilding is required only of students whose examination project is in machine construction or shipbuilding.

A student who wishes may be examined in electrotechnics, chemical technology, and study of materials during the early part of September. One whose examination project is in machine construction or in shipbuilding may be examined also in heating and ventilation construction.

**POLYTEKNISK EKSAMEN FOR BYGNINGSINGENIÖRER  
(POLYTECHNICAL EXAMINATION FOR CIVIL ENGINEERS)**

*Part I.*—The requirements for part I of the examination for civil engineers are the same as those for part I of the examination for mechanical engineers with the addition of an oral test in geology for which one mark is given.

*Part II.*—To be eligible for part II of this examination the student must present a certificate from the instructor in surveying and leveling showing that he has completed the required exercises in the course. If the examination project is in technical hygiene an additional certificate from the director of the mechanical laboratory is required.

Furthermore, the student must have:

- (a) Surveyed about 80 hectares<sup>1</sup> of land and made out a card with horizontal curves for about 25 hectares. The basis of the survey to include a triangulation, the points of which may fall in part outside of the designated area.
- (b) Passed examinations including:
  1. The leveling of a line about 2,000 meters in length for which 3 days may be used in projection, measuring, and staking out, and 3 days for verification of the instrument and performance of the leveling.
  2. The double leveling of a previously staked out line of about 600 meters in length. Five hours may be used for the verification of the instrument and performance of the leveling.

<sup>1</sup> 1 hectare is equivalent to 2.471 acres.

In addition, he must have completed the exercises in:

- (c) Machine construction.
- (d) Architecture.
- (e) Building statics and iron construction.
- (f) Road construction subjects.
- (g) Hydraulic construction subjects.
- (h) Technical hygiene.
- (i) Iron cement.

All themes or special assignments in courses connected with surveying and leveling are to be handed in by November 1 of the year preceding that in which the examination is taken; in courses connected with subjects (c) to (i), inclusive, by June 9 preceding the examination.

Finally, by November 1 preceding the examination the student must have handed in an examination project selected in connection with the work in building statics and iron construction, road construction subjects, or hydraulic construction subjects, and worked out under the guidance of the instructor in the same manner as a practical exercise. The work on the project should begin between the 9th and 24th of the preceding June.

The examination includes a 4-hour written test in each of building statics and iron construction, road construction subjects, and hydraulic construction subjects; and an oral test in each of:

Mechanical technology.	Building statics and iron construction.
Study of materials.	
Iron cement.	Road construction subjects.
Electro-technics.	Hydraulic construction subjects.
Surveying and leveling.	
Study of machines.	Technical hygiene.

One mark is given for each test. One mark is given also for the Kursusarbejder in each of the subjects (a) to (i), inclusive; in technical hygiene and iron cement this mark is included in that for the oral examination in the subject. The mark for the examination project is doubled. An additional mark is given for the drawings in connection with the Kursusarbejder and the examination project.

Since 1921 there has been opportunity also for a candidate for civil engineer to select the examination project in tech-

nical hygiene. The changes in the examination procedure when this is the case include:

- (a) Completion of the exercises in heating and ventilation in order to be eligible for the examination.
- (b) Addition to the examination of a 12-hour practical test consisting of a design in technical hygienic construction, or of a detailed drawing for such a construction. The mark for this is included with those for the Kursusarbejder in technical hygiene, and heating and ventilation.
- (c) The oral test in technical hygiene is given one mark, while the marks for the written and oral tests in road construction are combined into one.

**POLYTEKNIK EKSAMEN FOR ELEKTROINGENÖRER  
(POLYTECHNICAL EXAMINATION FOR ELECTRICAL ENGINEERS)**

*Förste Del (part I).*—The requirements for part I of the polytechnical examination for electrical engineers and the marks given are the same as for part I of the polytechnical examination for mechanical engineers.

*Anden Del (part II).*—Part II of the examination for electrical engineers consists of a *Forpröve* (preliminary examination) and of a *Slutpröve* (completion or final examination).

*Forpröve (preliminary examination).*—To be eligible for the preliminary examination the student must present certificates from the instructors concerned showing that he has completed the exercises and assigned work in each of the subjects:

Architectural drawing.	Elasticity and strength.
Electrical construction.	Mechanics.

He must present also a certificate from the director of the mechanical laboratory and of the electrotechnical laboratory showing that he has completed the required exercises and reports.

The preliminary examination includes a written test in each of elasticity and strength, general electro-technics, and mechanical technology; and an oral test in each of general electro-technics, mechanical technology, elasticity and strength, chemical technology, and study of materials.

One mark is given for each test; one mark is given also for the Kursusarbejder in elasticity and strength.

*Slutprøven (final examination).*—The final examination is offered in December for those majoring in electro-technics and in January for those majoring in mechanics. To be eligible for the examination the student must present at least 2 months before the time of the examination a certificate acceptable to the college showing that he has participated for at least 1 year in practical work at a machine factory. Part of the training may have been acquired at a mechanical work shop or through daily participation in electrical construction. To be acceptable the practical training must have been purposeful from the viewpoint of the object of this requirement and fairly continuous.

The student must present further before the 15th of the preceding April a certificate from the instructor of weak current electro-technics and from the instructor in machines showing that he has completed the construction exercises and met all the requirements in each of these courses; and from the director of the electro-technical laboratory showing that he has completed the exercises and reports in preparation for this examination at that laboratory.

Finally, by October 15 preceding the examination he must have handed in an *Eksamensarbejd* (examination project) selected from the following list for the preparation of which he may have devoted his time from April 1 to October 15:

- (a) A project worked out in the electro-technical laboratory.
- (b) A strong current electrical construction project.
- (c) Calculations and execution of construction drawings for electrical machines and machine construction.
- (d) A weak current electrical construction project and execution of a laboratory project for telegraphy and telephony.

Depending on the project selected, the student is to have participated also in one of the following groups of exercises and handed in all themes and special assignments by April 15 preceding the examination:

- (a) Exercises in the electro-technical laboratory for electrical engineers with an examination project to be worked out in this laboratory.
- (b) Exercises in electrical apparatus for students who have selected examination project (b) or (c).
- (c) Exercises in the laboratory for telegraphy and telephony for electrical engineers with examination project (d).

The examination includes an oral test and a 4-hour written test in each of:

Study of machines.  
Weak current electro-  
technics.

Electrical constructions.  
Electrical machines.

One mark is received for each test; one mark is received also for the Kursusarbejder in each of machine construction and design, and exercises in electrical machines. The mark for the examination project counts double; and one mark is given for the drawings in connection with all Kursusarbejder and the examination project.

DEN KONGELIGE VETERINAER OG LANDBOHØJSKOLE  
(THE ROYAL VETERINARY AND AGRICULTURAL COL-  
LEGE)

The Royal Veterinary and Agricultural College was founded by royal regulation on March 8, 1856, and opened on August 24, 2 years later. The veterinary department which has the distinction of being the fourth oldest in the world was founded in 1773. In addition to the training for veterinarians the college offers higher instruction in agriculture, surveying, horticulture, forestry, and dairying.

The college is under the supervision of the Ministry of Agriculture and under the more immediate administration of its director, faculty, and board of inspectors.

*Requirements for admission.*—For admission as a student one must be at least 16 years of age. The application for admission as a veterinary student shall be sent in before July 5, and for a student in agriculture, horticulture, and dairying before June 1 of the year in which admission is desired. In each case, the application must be accompanied by a certificate of birth and of academic qualification.

Admission as a veterinary student or as a student in surveying or forestry is dependent on having passed one of the examinations named below:

- (a) An examination which would qualify one for admission to the University of Copenhagen.
- (b) The almindelige Forberedelseseksamen (general preliminary examination) with 3 languages and with a total of at least 80 points, of which at least 17½ must have been received in Danish, and with a mark of at least "good" (10 points) in Danish composition. If the applicant has passed the

general preliminary examination with only two foreign languages and received a total of at least 75 points and the marks mentioned above in Danish he may fulfill the requirement by passing a supplementary examination in the third language with a mark of at least good.

- (c) The Realeksamen (real or modern examination) supplemented by an entrance examination.

One who did not include Latin in his Studentereksamen or one whose admission is based on requirement (b) or (c), must pass also a supplementary examination in Latin in order to be eligible for admission to veterinary training.

A foreigner may be admitted as a student if he has passed the required examinations in Denmark or if he has passed in his own country an examination equivalent to the Studentereksamen. For admission to veterinary study he must pass the supplementary examination in Latin and sign a statement promising not to practice as a Dyurlaeg (veterinarian) in Denmark.

Admission as an Ekstraordinaer Deltager (extraordinary participant) may be granted to one who is not registering for a particular course of instruction. For an extraordinary participant no certificates are necessary at the time of application for admission, but if he later wishes to pass an examination all the regular requirements must be fulfilled.

In addition to the general requirement of sufficient information and maturity to follow the instruction offered the requirements for admission as a student in agriculture, horticulture, dairying, and forestry are based on the practical experience indicated below in connection with the examination offered in each.

**Instruction.**—Instruction at the college is offered in preparation for the six regular examinations and for the special and continuation courses described below. It consists of lectures, demonstrations, field trips, examinations, and practical exercises. The preparation planned for the various examinations varies in length from 2½ years for the examination in horticulture to 5½ years for that in forestry.

Each examination consists of 2 or 3 parts, each of which must be completed in the regular order. The subjects included in the preparation for each part of the examination constitute a Kursus (course). To be eligible for an examination one must be registered at the college as a student prepar-

ing for the examination in question. The examinations consist of written, oral, practical-written, and practical-oral tests. The written tests ordinarily last 4 hours. The other tests vary in length. Thus the tests in ambulatory clinic are at most one-half hour in length while the test in chemical or agricultural-chemical quantitative analysis in agriculture, horticulture, or dairying is a 2-day examination of 11 hours per day; and the practical written test in soil examination in the examination for surveyors or for foresters requires 2 days of 12 hours each. The oral tests or examinations are public.

The examination in each subject is conducted by a committee consisting of the instructor of the subject and of two censors of whom at least one must be appointed from outside of the college. For the practical examination in forestry three censors are required.

The marks given by each censor range from udmaerket godt (excellent) with a numerical value of 6 to slet (poor) with a numerical value of 1. Each Specialkarakter or subject mark is the average of the marks given by the censors for a subject in each test and has the same numerical value as the corresponding subject marks of the pharmaceutical examination (see p. 106) with the numbers above +1% preceded by a plus sign (+8, +7%, etc.). The Hovedkarakter or average and final mark for each examination is expressed by one of the following terms:

Förste Karakter med Udmaerkelse (first mark with distinction)-----	Above +7%
Förste Karakter (first mark)-----	+6% to +7%
Anden Karakter (second mark)-----	+5 to +6%
Tredje Karakter (third mark)-----	Below +5

#### DEGREES

*Landbrukskandidat* (*candidate in agriculture*) may be attained by one who has been admitted as a *Landbrugsstuderende* (*student in agriculture*) after 2½ years of study and success in the *Landbrugseksamen* (*agricultural examination*).

*Havebrugskandidat* (*candidate in horticulture*) may be attained by one who has been admitted as a *Havebrugsstuderende* (*student in horticulture*) after 2½ years of study and success in the *Havebrugseksamen* (*examination in horticulture*).

*Forstkandidat* (*candidate in forestry*) requires about 5½ years of study beyond the Studentereksamen or beyond the other examinations qualifying for admission as Skovbrugsstuderende (student in forestry) and success in the Skovbrugseksamen (examination in forestry).

*Mejeribrugskandidat* (*candidate in dairying*) requires about 2½ years of study after admission as a Mejeribrugsstuderende (student in dairying) and success in the Mejeribrugseksamen (examination in dairying).

*Veterinaer* or *Dyurlæge* (*veterinarian*) requires about 5½ years of study beyond the Studentereksamen and success in the Veterinaereksamen (veterinary examination).

*Landinspektør* (*surveyor*) requires about 4½ years of study beyond the Studentereksamen and success in the Landinspektøreksamen (examination for surveyors).

#### EXAMINATIONS

The following is a brief summary of the examinations offered by the college with the amount of practical experience required, the period of preparation for each part of the examination, and the subjects offered. The first number after each subject represents the total number of hours of instruction per week during the semester concerned; the number in parentheses represents the number of hours per week of laboratory work, exercises, and demonstrations.

*Veterinaereksamen* (*veterinary examination*).—Preparation for the veterinary examination may be completed in 5½ years. To be eligible for the examination one must be registered at the college as a Veterinaerstuderende (veterinary student). The examination consists of 3 parts of which part III is taken in 2 sections. All 3 parts of the examination are offered regularly during June-July of each year; in addition, examination in the 2 sections of part III is offered during December-January. Arrangements may be made for certain tests to be taken at other times; thus in part I the 10-hour practical-written test in chemistry may be taken in May preceding the rest of the examination.

*Første Del* (part I).—Preparation for part I of the examination may be completed in two semesters.

TABLE 5.—*Første Kursus* (first course)

Subject of instruction	Number of hours per week	
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to May 31
Physics	5	4 to May 15.
Chemistry	5 (9)	4 to May 15 (9).
Botany	4	4 to Mar. 31.
Zoology	5	1 to Mar. 15.
Anatomy	5 <sup>1</sup>	5 <sup>1</sup>

<sup>1</sup> Duration of semester.<sup>1</sup> Represents 1 semester of laboratory work or demonstrations when the exact number of hours cannot be given.

The examination includes an oral test in each subject except anatomy, and a practical-written test in chemistry. To pass the examination the Karakterkvotient (grade quotient) or the average of the five individual marks for the examination must be at least 3%.

*Anden Del* (part II).—Preparation for part II of the examination may be completed in three semesters. To be eligible for this part of the examination the student must have passed part I, and in addition, a practical-oral test in pharmacy.

TABLE 6.—*Andet Kursus* (second course)

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to July 15	Semester 3, Jan. 9 to Dec. 21
1	2	3	4
Anatomy	5 <sup>1</sup>	5 <sup>1</sup>	5 <sup>1</sup>
Physiology	3	3	2
Animal breeding and husbandry	5	4	5
Social-economics			
Heredity	2		
Pharmacy	(1)	(1)	
Dissection (from Sept. 15 to Apr. 15)	(1)	(1)	(1)
Normal histology and microscopic anatomy		(1-2)	(1-2)
Judging of domestic animals		(14-20)	(14-20)
Stationary clinic		(14-20)	(14-20)
Physiological chemistry			(1)
Care and use of horses		(1)	

<sup>1</sup> Represents 1 semester of laboratory work or demonstrations, when the exact number of hours cannot be given.

The examination includes an oral test in each of anatomy and heredity; a practical-oral test in each of normal histology and microscopic anatomy, dissection, and physiology; and

1 written, 1 oral, and 1 practical-oral test in animal breeding and husbandry.

One mark is received for each test. To pass the examination the average mark must be at least four and "poor" must not have been received as the mark for any subject.

*Tredje Del (part III).*—Preparation for the first section of part III of the examination may be completed in 5 semesters. To be eligible for this examination, the student must have passed part II, participated in the clinical instruction and in pathological dissection, passed a test in the care and use of horses, and a practical-oral test in milk inspection. A period of at least 1½ years must intervene between part II and the first section of part III of the examination.

TABLE 7.—*Tredje Kursus 1ste Afdeling (third course, first section)*

Subjects of instruction	Number of hours per week				
	Semester 1 Feb. 1 to July 15	Semester 2 Sept. 1 to Jan. 31	Semester 3 Feb. 1 to July 15	Semester 4 Sept. 1 to Jan. 31	Semester 4 Feb. 1 to May 31
1	3	3	4	5	6
Horseshoeing		2	2 to May 1 <sup>1</sup>	(1)	
Pharmacology and general therapeutics	3	4			1.
General pathology	3	2			1.
Special pathology and therapeutics	3	3	3	3	3.
Pathological anatomy	2 <sup>1</sup>	3 <sup>1</sup>	2	3 <sup>1</sup>	2 <sup>1</sup>
Surgery	4	3	4	3	4.
Obstetrics				3	3.
Veterinary law				3	2.
Meat inspection			4 <sup>1</sup>		(1).
Milk inspection			1 <sup>1</sup>		
Bacteriology and parasitology		2			
Serology and serum therapy					
Stationary clinic	(14-20)	(14-20)	(14-20)	(14-20)	(14-20).
Methods of clinical examination	(1)				
Surgical operations from Sept. 16 to Apr. 15				(1)	(1).
Pathological histology			(1)		
Bacteriology			(1)		
Meat inspection (exercises in slaughtering)				(1)	(1).

<sup>1</sup> Represents 1 semester of laboratory work or demonstrations when the exact number of hours cannot be given.

The examination consists of a test in pathological anatomy; an oral test in each of general pathology, meat inspection, special pathology and therapeutics, general therapeutics and pharmacology, surgery, and veterinary law; a written test in

special pathology and therapeutics, and in surgery; a practical-oral test in surgical operations, and in stationary clinic; and 1 oral and 1 practical-oral test in horseshoeing and in bacteriology and parasitology.

Three marks are received for the practical-oral test in stationary clinic and one for each of the other tests. To pass the examination the student must receive an average of at least four, and he must not have received a mark of "poor" in any subject.

*Tredje Kursus 2Den Afdeling (Third Course, Second Section).*—Preparation for this section of the examination which also is called the Slutningskursus (completion course) consists of one-half year of training as a Praktikant (practicant) at the ambulatory clinic. The work may be taken either from February 1 to July 14, or from July 15 to January 13, of each year and includes practical work and demonstrations in ambulatory clinic, obstetrics, and veterinary law.

The examination consists of a practical-written test in veterinary law and of a practical-oral test in each of the remaining subjects. To pass the examination the student must receive a positiv Karakterkvotient (positive grade quotient), that is, an average mark of at least +1 for this section, and the average mark for both sections of part II of the examination must be at least four.

• *Landbrugsekseen (examination in agriculture).*—To be eligible as a Landbrugsstuderende (student in agriculture) at the Royal Veterinary and Agricultural College one must have had at least 3 years of practical experience in agriculture after 15 years of age, or at least 2 years of practical experience after 17 years of age. The examination consists of two parts, and preparation for it may be completed in about 2½ years.

*Første Del (part II).*—As an introduction to agricultural study there is offered during the first week of September a number of lectures including a survey of the nature of agricultural subjects, the content of instruction, and the explanation and direction concerning the use of the means of instruction at the college.

TABLE 8.—*Første Kursus* (first course)

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to May 15	Semester 3, Sept. 1 to Dec. 21
1	3	3	4
Physics	5	4 to May 15	(2).
Meteorology		1	
Chemistry	5 (9)	4 to May 15 (9 to May 15)	
Geology and soils		4	
Botany and agricultural botany	4 (1)	4 to Mar. 31 (2 to Mar. 31) 2 from Apr. 1 (4 from Apr. 1).	2 to Nov. 15 (6).
Microbiology			2 (16).
Heredity			2
Zoology	5	1 to May 15	
Anatomy of domestic animals		3	1.
Physiology of domestic animals			3.
Social economics			5.
Agricultural chemistry			2 (6).
Drawing	(6)	(6 to May 15)	
Surveying and leveling	(4)	(2)	

Part of the examination is offered in June and part during the following January. However, the 12-hour practical-written test in chemistry may be taken in May, and the practical test in surveying and leveling is generally taken during July-August. The part offered in June includes a test in drawing; an oral test in each of chemistry, zoology, and geology and soils; and a practical-written test in chemistry. The part of the examination offered in January includes a written test in botany, and in physics and meteorology; and an oral test in each of the subjects or groups of subjects named below:

Physics and meteorology.  
Systematic botany, agricultural botany, and heredity.  
Physiological botany and microbiology.

Anatomy of domestic animals.  
Physiology of domestic animals.  
Social economics.

In grading, one mark is given for each test and in order to pass this part of the examination the student must receive an average mark of at least three and two-thirds.

*Anden Del (part II).*—To be eligible for part II of the examination the student must have passed part I.

TABLE 9.—*Andet Kursus (second course)*

Subject of instruction	Number of hours per week		
	Semester 1, Feb. 1 to July 15	Semester 2, Sept. 1 to Jan. 31	Semester 3, Feb. 1 to Mar. 15
1	2	3	4
Agricultural zoology.....	2.....		
Plant pathology.....	2.....	2.....	
Agricultural implements and mechanics.....		3 (2-3).....	3.....
Power machines and fixtures.....	3 (2-3).....		2.....
Agricultural soil cultivation and plant culture.....	5.....	5 (3).....	2 (1).....
Breeding and use of domestic animals.....	4.....	5.....	2.....
Dairying.....	2.....	2 (1).....	1.....
Agricultural geography.....		1.....	1.....
General agriculture.....	4.....	5 (1).....	1 (2).....
Diseases and horse shoeing.....		2.....	(2-3).....
House building.....			(2).....
Agricultural chemistry.....	(6).....	(2-3).....	(2-3).....
Judging of animals.....			

With the exception of the practical-written test in agricultural chemistry which is taken in July at the close of the first semester, part II of the examination is offered in April at the close of the third semester of study. It includes an oral test in each of the subject groups, agricultural zoology and plant pathology, and dairying and agricultural geography; a practical-written test in agricultural chemistry; and a written test in each of dairying and agricultural geography, agricultural soil cultivation and plant culture, and general agriculture; and 1 written, 1 oral, and 1 practical-oral test in animal breeding and husbandry. For each of the above tests the student receives one mark.

This examination also includes an oral test in agricultural soil cultivation and plant culture, and in general agriculture for each of which two marks are given; and one oral and one written test in each of agricultural implements and mechanics, and in power machines with one mark for the two tests in each subject.

An average mark of at least four is necessary to pass this part of the examination.

*Landinspektörsamen (examination for surveyors).*—To be eligible for this examination one must be registered at the college as a *Landinspektörstuderende* (student in surveying). The examination requires about 4½ years of preparation and consists of three parts.

*Förste Del (part I).—*TABLE 10.—*Förste Kursus (first course)*

Subjects of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to June 30	Semester 3, Sept. 1 to Feb. 15
1	2	3	4
Arithmetic and mathematics	4	5	5
Physics	2	2	2 (2 to Dec. 21).
Meteorology		1 to June 15	
Chemistry	5 (9)	2 to May 15 (9)	1.
Geology and soils		4 to June 15	
Botany and agricultural botany	4 (1)	{ 4 to Mar. 31 2 from Apr. 1	{ 2 to Nov. 15. 5 to Dec. 21.
Social economics			
Surveying and leveling	2 from Oct. 1	3 (2)	
Drawing	(8)	(8-12)	(8-12)
Soil examination			(6).

The tests included in this examination are offered during the last part of February and the first part of March of each year, except the 12-hour practical-written test in chemistry which is taken during the preceding June. The tests offered during the main examination period include a test in drawing; a written test in arithmetic and in mathematics; and an oral test in each of mathematics, physics and meteorology, chemistry, geology and soils, botany, and social economics.

In grading, two marks are given for the written tests in mathematics and one for each of the remaining tests. To pass the examination the average mark for part I must be at least 3½.

*Anden Del (part II).—* To be eligible for part II of the examination it is necessary to have passed part I, and to take part II within 3½ years after completion of part I.

The tests of this part of the examination are offered in June of each year except the 2-day, 12-hour per day, practical-written test in soil analysis which is taken during May-June of the preceding year. In addition to the test mentioned the examination includes a test in drawing; 1 written and 2 oral tests in surveying and leveling; an oral test in each of registry of land, agricultural law, agriculture, and drainage construction; and a practical test in the latter and in land registration.

TABLE 11.—*Andet Kursus (second course)*

Subjects of instruction	Number of hours per week		
	Semester 1, Mar. 15 to June 30	Semester 2, Sept. 1 to Jan. 31	Semester 3, Feb. 1 to May 31
1	1	3	4
Surveying and leveling.....	5 (2).....	6 from Oct. 1 (2 from Oct. 1).....	4 (2).....
Registry of lands.....	4 (7).....	4 (10).....	4 (10).....
Agricultural law.....	2.....	2.....	1.....
Agriculture.....	2.....	2.....	1/4 to Apr. 15. (1 from Apr. 16.) (1).....
Land evaluation.....	.....	(1).....	.....
Soil examination.....	(6).....	.....	.....
Land and water construction.....	6.....	5.....	.....
Do.....	}(6).....	(10).....	(10).....
Drawing.....	.....	.....	.....

<sup>1</sup> The exact number of hours of laboratory work cannot be given.

Two marks are given for the written test in surveying and leveling and for the oral test in land registration; one mark for each of the remaining tests. An average mark of at least 4 must be received in order to pass this part of the examination.

*Tredje Del (part III).*—To be eligible for the training included in the preparation for part III of the examination the student, after passing part II, must have had 10 months of full-time practical experience with a practicing surveyor, or a minimum of 8 months of practical experience with a practicing surveyor followed by at least 2 months at the danske Hedeselskab (the Danish Society for the Cultivation of Heaths), and received attestations giving a detailed account of this practical experience. If the examinee has been with the Danish Society for the Cultivation of Heaths he must, in addition, have prepared a Dagbog (day book) for the society with a certified copy for the instructor in drainage construction.

The preparation for part III of the examination includes Øvelser (exercises) in land registration during January–April, in drainage construction during April–May, in triangulation during June, and in land evaluation according to arrangements with the instructor.

Application for permission to take the examination must be made before the first of June. The examination begins in

July and should be completed before June 25 of the following year. It consists chiefly of practical projects to be worked out in the field with complete reports and descriptions of the projects and of the results attained. The examination includes the following listed Pröver (tests) with the time within which each is to be completed:

- Triangulation—July 5 to January 15.
- Surveying of a larger area—August 1 to January 15.
- Detailed surveying—July 15 to January 15.
- Leveling—July 5 to January 15.
- Subdividing—April, 4 days.
- Allotment—December 21 to February 5, followed by additional completion work which constitutes the real test and for which the student may have 6 weeks.
- Land evaluation—May, 1 day.
- Drainage construction—Conducted at the college under the supervision of the instructor.
- Drawing—Consists of graphs worked out in connection with the tests in surveying and in drainage construction.

In grading, two marks are given for leveling and for drainage construction; one for each of the remaining tests. To pass the examination the student must receive an average mark of at least 4 with a mark of at least "good minus" in surveying of a larger area and in subdividing. One who has passed the examination is called a Landinspektör (surveyor).

*Havebrugseksamen* (*examination in horticulture*).—To be eligible for admission as a student in horticulture one must have had at least 4 years of practical experience in horticulture after 15 years of age or 3 years of practical experience after 17 years of age. The examination is offered in two parts.

*Förste Del (part I).*—During the first week of September of each year a number of introductory lectures are offered giving a survey of the content and significance of the instruction offered and directions for the guidance of students in the use of the aids and resources of the college.

One section of this part of the examination is offered in June, the other the following January. However, the tests in surveying and leveling are usually taken during July or August, and the practical-written test in chemistry may be taken in May.

TABLE 12.—*Første Kursus (first course)*

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Sept. 1 to June 15	Semester 3, Sept. 1 to Dec. 21
1	2	3	4
Physics.....	5.....	4 to May 15.....	(2).
Meteorology.....		1.....	
Chemistry.....	5 (9).....	4 to May 15 (9 to May 15).....	
Geology and soils.....		4.....	
Agricultural chemistry.....			2
Surveying and leveling.....	(4).....	(2).....	
Horticultural botany.....		2 from Apr. 1.....	2 to Nov. 15 (3 to Nov. 15).
Heredity.....			2
Social economics.....			5
Cultivation of ornamental plants.....			3
Landscape gardening.....			3
Botany.....	4 (1).....	4 to Mar. 31 (2 to Mar. 31) 4 from Apr. 1.....	(6).
Microbiology.....			2
Drawing.....	(6).....	(6).....	(6).

In addition to those mentioned, the tests offered in June include an oral test in geology and soils and in chemistry. The tests offered in January include drawing; an oral-written test in physiological botany and microbiology; and an oral test in each of the subject groups, physics and meteorology, and systematic botany, and heredity.

One mark is received for each test and to pass the examination the average mark must be at least 3%.

*Anden Del (part II).*—

TABLE 13.—*Andet Kursus (second course)*<sup>1</sup>

Subject of instruction	Number of hours per week	
	Semester 1, Feb. 1 to June 30	Semester 2, Sept. 1 to Jan. 5
General horticulture and horticultural economics.....	4.....	3
Truck gardening.....	3.....	2
Fruit horticulture.....	3.....	2
Cultivation of ornamental plants.....	3.....	2
Nursery management.....		2
Hothouse cultivation of useful plants.....		2
Nursery and hothouse building.....	2.....	2
Horticultural botany.....	2 from Mar. 1 (2 from Mar. 1)	
Plant pathology.....	4 to Feb. 28 (2 from Mar. 1).....	2
Horticultural zoology.....	2.....	
Accounting, property, and commercial conditions.....		4
Agricultural chemistry.....	(6).....	
Landscape gardening.....	(6).....	(6).
Remaining horticultural subjects.....	(2).....	(2).

<sup>1</sup> The training includes field trips to nurseries and gardens in Copenhagen and during the summer semester a more extended tour of various parts of Denmark.

The examination is begun in July with a 2-day 11 hours per day practical-written test in agricultural chemistry; an oral test in horticultural botany; and one written and one oral test in cultivation of ornamental plants. It is completed in January with a test in landscape gardening, and in hothouse cultivation of useful plants; one written and one oral test in each of general horticulture and horticultural economics, truck gardening, and fruit horticulture; and an oral test in each of nursery management, nursery and hothouse building, plant pathology, horticultural zoology, and accounting, property, and commercial conditions.

One mark is received for each test. To pass the examination the average mark must be at least 4.

*Skovbrugseksamen (examination in forestry).*—Preparation for the examination in forestry may be completed in 5½ years. It includes 2 years of 12 months each of practical work under the direction of a Danish candidate in forestry. The first year of practical work should be taken ordinarily before beginning training for part I of the examination at the college, but may be taken between the preparation for parts I and II. The second year of practical work must be taken after the completion of part II and before part III of the examination. The first year of practical work includes training in the various phases of forestry, including also administrative features and hunting.

In the course of the second year of practical training, the student must prepare a *Fremstilling* (presentation) giving a complete report of the significant features of the forest district of his training from the viewpoint of forest technique and economics.

*Første Del (part I).*—Instruction for part I of the examination may be completed in 1½ years.

Except for the practical-written test in chemistry and the test in drawing which are offered during the preceding June and December, respectively, the tests for this part of the examination are offered during the latter part of February and the first part of March of each year. They include a written test in arithmetic and in mathematics, an oral test in each of mathematics, physics and meteorology, chemistry, geology and soils, systemic botany and heredity, physiological botany and microbiology, forest botany, and zoology; and a written or practical-written test in botany.

TABLE 14.—*Første Kursus (first course)*

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to July 15	Semester 3, Sept. 1 to Feb. 15
1	2	3	4
Arithmetic and mathematics	4	5	4
Physics	5	4 to May 15	2 to Dec. 21
Meteorology		1 to June 15	
Chemistry	5 (9)	2 to May 15 (9)	1
Geology and soils		4 to June 15	2
Botany	4 (1)	4 to Mar. 31 (2 to Mar. 31, 4 from Apr. 1)	6
Microbiology			2 to Dec. 21
Forestry botany		4 from Apr. 1	5 (2 to Dec. 21)
Heredity			2 to Dec. 21
Zoology	5	1 to May 15	
Introduction to study of forestry	2 to Oct. 31		
Drawing	(6)	(6)	6 to Nov. 30

Two marks are given for the written test in mathematics; one for each of the remaining tests. To pass the examination the average mark must be at least 3%.

*Anden Del (part II).*—In this part of the examination the arrangement of the work for each semester varies somewhat for students who begin the training in odd- or even-numbered years, respectively. On the completion of the course, however, the same work has been covered by both groups. The plan of training indicated below is that for students beginning this preparation during an odd-numbered year.

The examination is offered during March of each year and includes an oral test in each of plant pathology, forest zoology, social economics, agricultural law, timber measurement and growth, and surveying and leveling; a practical-written examination in each of bookkeeping and commerce, and soil examination; and 1 written and 1 oral examination in each of forest cultivation, goods and commerce, forest economics, administration, and history and statistics.

One mark is given for each subject. To pass the examination the average mark must be at least 4.

TABLE 15.—*Andet Kursus (second course)*

Subject of instruction	Number of hours per week			
	Semester 1, Mar. 15 to July 15	Semester 2, Sept. 1 to Jan. 31	Semester 3, Feb. 1 to July 15	Semester 4, Sept. 1 to Feb. 28
1	2	3	4	5
Plant pathology	2	2		
Forest zoology			5 from Mar. 15	1
Social economics		5 to Dec. 21		
Agricultural law			2 from Mar. 15	2 to Jan. 31
Forest cultivation	3	4	2	
Goods and commerce	3	4	2	
Timber measurement and growth	5 (June 12 to June 29)	2		
Forest economics			2	3
Administration			3 from Mar. 15 (2)	3 (2)
History and statistics	3	3		
Surveying and leveling	5 (July 1 to July 31)	3 from Oct. 1 (Oct. 1 to Nov. 30)		3
Bookkeeping and commerce			(6)	
Forestry	(2) <sup>1</sup>	(2) <sup>1</sup>	(3)	
Forestry economics and administration			June 21 to July 15	(3)

<sup>1</sup> Indicates practical work in timber growth and measurement.

*Tredje Del (part III).*—To be eligible for part III of the examination the student must have passed part II, completed 1 year of practical work in forestry after the completion of part II, and presented an attestation from the forest director concerned that the duration of the service was of the required length, that the assigned examination tasks have been prepared to the best of his knowledge without undue assistance, and that as far as circumstances have allowed the student has participated in administrative activities including bookkeeping, accounting, and in administration of hunting. The student must present also a written statement from an instructor at the college that the afore-mentioned report of conditions in the forest district was sent in in due time.

Part III of the examination includes the following listed subjects for each of which the student receives 1 mark. To pass the examination the average mark must be at least 4.

Judging of seeds and plants, execution and judging of nursery work.

Execution and judging of work in cultivation.

Execution and judging of tree marking and cutting.

Execution and judging of fencing, road, and aqueduct work.

Execution and performance of improvements.

Selection and evaluation of wood.

Timber growth and measurement.

Forest classification and description.

Designing.

Surveying and leveling.

*Mejeribrugseksamens* (examination in dairying).—To be admitted as Mejeribrugsstuderende (student in dairying) one must have had at least 4 years of practical experience after 15 years of age or 3 years of practical experience after 17 years of age. The examination consists of two parts and preparation for it may be completed in 2½ years.

*Förste Del (part I).*—

TABLE 16.—*Förste Kursus* (first course)

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to June 15	Semester 3, Sept. 1 to Dec. 21
1	2	3	4
Physics.....	5.....	4 to May 15.....	(2).
Meteorology.....	1.....		
Chemistry.....	5 (9).....	4 to May 15 (9 to May 15).....	
Geology and soils.....		4.....	
Botany and agricultural chemistry.....	4 (1).....	4 to Mar. 31 (2 to Mar. 31) 2 from Apr. 1 (4 from Apr. 1).	2 to Nov. 15 (16),
Microbiology.....			2 (16).
Heredity.....			2.
Zoology.....	2-3.....	1 to May 15.....	
Anatomy of domestic animals.....		3.....	1.
Physiology of domestic animals.....			3.
Social economics.....			5.
Agricultural chemistry.....	(6).....	(6 to May 15).....	2 (6).
Drawing.....			

Part of this examination is offered in June and part during the following January. However, the practical-written tests in chemistry may be taken during the preceding May. The tests offered in June include, in addition to the test mentioned, an oral test in each of chemistry, geology and soils, and zoology. The tests offered in January include a written test in botany; 1 written and 1 oral test in meteorology; and an oral test in each of anatomy of domestic animals, physiology of domestic animals, social economics, physiological botany and microbiology, and systematic botany, agricultural botany, and heredity.

One mark is given for each test. To pass the examination the average mark must be at least 3%.

*Anden Del (part II).—*

TABLE 17.—*Andet Kursus (second course)*

Subject of instruction	Number of hours per week		
	Semester 1, Feb. 1 to July 15	Semester 2, Sept. 1 to Jan. 31	Semester 3, Feb. 1 to Mar. 15
1	2	3	4
Animal breeding and husbandry.....	4.....	5.....	2.....
Dairying.....	4.....	4.....	(1).
Dairy management.....		2.....	
Chemistry and bacteriology of dairying.....	4.....	2.....	(1).
Mechanics.....	3 (2-3).....		2.....
Agricultural geography.....		1.....	1.....
General agriculture.....	4.....	5 (1).....	1 (2).
Animal diseases.....		1.....	
Building.....			(2).
Agricultural chemistry.....	(6).....	(2-3).....	(2-3).
Judging of animals.....			

<sup>1</sup> The exact number of hours cannot be given.

With the exception of the 2-day, 11 hours per day, practical-written test in agricultural chemistry this examination is offered during July of each year. It includes a test in drawing; a written test in animal breeding and husbandry; an oral test in dairy management and in diseases of animals; a practical-written test in bacteriology of dairying; one written and one practical-oral test in animal breeding and husbandry, and in the chemistry and bacteriology of dairying; one written and one oral test in each of dairying including agricultural geography, mechanics, and general agriculture.

Two marks are given for the test in dairying including agricultural geography and one mark for each of the remaining subjects. To pass the examination the average mark must be at least 4.

*Fortsættelseskursus for Dyurlæger (continuation or advanced course for veterinary surgeons).*—Each year there is offered, ordinarily in September, a continuation or advanced course for surgeons. The plan for the course is published each year before the beginning of the course.

*Fortsættelseskursus for Landbrugskandidater (continuation or advanced courses for candidates in agriculture).*—For a candidate in agriculture who desires specialized training in

preparation for a position as Konsulent (consultant) Forsøgsledere (director of research), or Laerere ved Landbrugsskole (teacher at an agricultural school) the college offers a Kursus in Jordbrugslaere (course in agriculture) and a Kursus i Husdyrbrug (course in animal husbandry).

Each course begins on September 1 of the odd-numbered years and may be completed in 1½ years.

The instruction includes in part participation in the work of regular subjects not previously studied and in part advanced study under the guidance and direction of the instructors concerned through consultation, practical exercises, reading, field trips, working out of written assignments, etc.

The examination in either course must be taken within 10 years after the candidate was registered at the college for his examination in agriculture, and the latter must have been passed with 1. Karakter (first mark). In addition, the candidate must have passed one of the four examinations listed under (a), (b), or (c), on pages 68-69, and an examination in Latin.

TABLE 18.—*Kursus i Jordbrugslaere (course in agriculture)*

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to July 15	Semester 3, Sept. 1 to Mar. 15
1	3	3	4
Arithmetic and mathematics.....	4.....	5.....	4 to Jan. 31.
Soils.....	2.....		
Biological subjects.....	(1).....	(1).....	(1).....
Agricultural soil cultivation and plant culture.....	2.....	3.....	2.....
Implements and mechanics.....	1 1.....	1 1.....	1 1.....
Agricultural law.....		2 from Mar. 15 to June 30.	2 to Jan. 31.
Agricultural chemistry and soils.....	(6).....	(6).....	(6).....
Agricultural subjects.....	(1).....	(1).....	(1).....
Forestry and horticulture.....	(1).....	(1).....	(1).....

<sup>1</sup> The exact number of hours cannot be given.

<sup>2</sup> In addition, there are special hours the exact number of which cannot be given.

The examination is offered every second year during March-April and includes a 3-day practical-written test in agricultural chemistry; a test in agricultural law; a written test in arithmetic; a practical-written test in soils; an oral test in implements and mechanics; one oral and one written

test in mathematics and in agricultural soil cultivation and plant culture; a written or a practical-written test in one biological subject and an oral test in each of two biological subjects.

Two marks are given for the written test in agricultural soil cultivation and one mark for each of the other tests. To pass the examination the average mark must be at least +5.

TABLE 19.—*Kursus i Husdyrbrug* (course in animal husbandry)

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Mar. 31	Semester 2, Feb 1 to July 15	Semester 3, Sept 1 to Mar. 15
1	2	3	4
Mathematics and arithmetic.....	4.....	5 to July 15.....	4 to Jan. 31.....
Anatomy.....	5.....	5.....	5.....
Physiology.....	(1).....	(1).....	(1).....
Diseases of animals.....	1.....	1 (2-4).....	(1).....
Horseshoeing.....	1.....	(2-4).....	(1).....
Animal husbandry.....	2.....	2.....	(1).....
Agricultural chemistry.....	(6).....	(1).....	(6).....
Heredity.....	(1).....	(1).....	(1).....
Dissection (Sept. 15 to Apr. 15).....	(1).....	(1).....	(1).....
Normal histology.....	(1).....	(1).....	(1).....
Drawing.....	(1).....	(1).....	(1).....

<sup>1</sup> The exact number of hours cannot be given.

The examination is offered during March and April every second year. It includes a test in dissection and histology, and in drawing; a written test in arithmetic; a practical-written test in chemistry; an oral test in each of heredity, anatomy, physiology, and animal diseases and horseshoeing; and one oral and one written test in each of mathematics and animal husbandry.

Two marks are given for the written test in animal husbandry; one for each of the other subjects. To pass the examination the average mark must be at least +5.

*Kursus i Kulturteknik for Landbrugskandidater* (course in culture technique for candidates in agriculture).—In response to frequent demands for trained assistants in culture technique a course in this subject for candidates in agriculture was provided as an experiment in March 1920. The course begins on September 1 and may be completed in 1½ years.

To be eligible for examination in this course the candidate must have passed his examination for candidate in agriculture

with a mark of 1ste Karakter (first mark). In addition, he must have passed one of the examinations required for admission as a student in surveying or forestry (see pp. 68-69), or, he must have passed at the college an examination in arithmetic and mathematics which would meet the requirements of the entrance examination for students in surveying and forestry in these subjects. He must also present a certificate of having had at least 4 months of practical training acceptable to the college in moss culture, drainage, and irrigation.

The instruction consists of a *toeretisk Del* (theoretical part) offered at the college, and of a *praktisk Del* (practical part) offered outside of the college.

TABLE 20

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to June 15	Semester 3, Oct. 1 to Apr. 30
1	2	3	4
Mathematics.....	6.....	6.....	
Physics.....	2.....		
Surveying and leveling.....	2.....	3 (2).....	
Soil cultivation and plant culture.....	2.....	2.....	4 (2).
Agricultural law.....	2.....	1.....	
Drainage construction.....		2.....	
Execution of culture work.....	6.....	6.....	5 to Jan. 31 (9). (9).
Implements and mechanics.....	2.....	1 (2-3).....	
Drawing.....	(6).....	(6).....	
Soil examination.....	(6).....		

The examination includes a test in drawing; a written test in each of soil cultivation and plant culture, implements and mechanics, and arithmetic; a practical-written test in soil examination; an oral test in physics and in agricultural law; and one written and one oral test in each of mathematics, surveying and leveling, drainage construction, and execution of culture work.

Two marks are given for the written test in mathematics; one for each of the other subjects. To pass the examination the average mark must be at least 5 plus (5+).

*Fortsættelseskursus i Kulturteknik for Landinspektører* (continuation or advanced course in culture technique for surveyors).—The continuation or advanced course in culture technique for surveyors begins on September 1 of the even-

numbered years. Admission to the course is dependent on having passed the examination for surveyors with 1 Karakter (first mark); of having had practical experience equivalent to that required for admission as a student in agriculture (see p. 74); and of having had included in one's training 1 year under the direction of a technician, or at a culture technical institution recognized by the college.

TABLE 21

Subject of instruction	Number of hours per week		
	Semester 1, Sept. 1 to Jan. 31	Semester 2, Feb. 1 to July 15	Semester 3, Sept. 1 to Mar. 15
1	2	3	4
Botany			
Microbiology	4 <sup>1</sup> (6)	(2 to Mar. 31)	
Agricultural zoology		(4 from Apr. 1)	
Agricultural geography	1	2	
Plant pathology		2	
Agricultural implements and mechanics	3 <sup>1</sup> (2-3) <sup>1</sup>	3 <sup>1</sup> (2-3) <sup>1</sup>	2 to Jan. 31.
Agricultural soil cultivation and plant culture	(3) <sup>1</sup>	3 <sup>1</sup> (1 to Mar. 15) <sup>1</sup>	3 (2-3) <sup>1</sup>
Drainage construction	(?)	(?)	5 to Jan. 31 <sup>1</sup> (2) <sup>1</sup> (?)

<sup>1</sup> Additional special hours; the exact number cannot be given.

<sup>1</sup> The exact number of hours cannot be given.

The examination is offered every second year during March-April and includes a test in drawing; an oral test in each of agricultural zoology and plant pathology, and agricultural geography; 1 oral and 1 written test in each of botany, agricultural implements and mechanics, and agricultural soil cultivation, and plant culture; and 1 oral and 1 practical test in drainage construction.

Two marks are given for the oral test in each of the subject groups, agricultural implements and mechanics, and agricultural soil cultivation and plant culture; one mark for each of the remaining subjects. To pass the examination the average mark must be at least +5.

*Specialkursus (special course).*—A candidate who desires further training in a subject or subject group offered at the college may arrange for a special course which in each instance must be approved by the Undervisningsraad (council of instruction or curriculum committee) of the college. Such special course includes, in general, 1 or 2

major subjects, from 2 to 4 minor subjects, and a final examination.

To be eligible for this examination the candidate must have passed one of the regular examinations of the college with one Karakter (first mark). He must also have fulfilled the entrance requirements for a student in surveying or forestry, or for a veterinary student; and if he has not passed an examination in Latin, he must fulfill the requirements for a veterinary student in this subject.

A candidate from another institution is eligible to this Specialuddannelse (special training) when in the judgment of the curriculum committee he possesses the necessary qualifications.

*Undervisning for Beslagsmede (instruction for farriers).*— During May-June and September-October of each year the college offers a course in the art of farriery or horseshoeing. The course requires no entrance examination but the college reserves the right of refusing admission to one who would not be benefitted by the instruction offered.

The course includes 7 hours every week-day of training in the art of farriery and at least 4 hours per week in horseshoeing. It concludes with two 2-hour practical tests and one oral test.

In grading, the same system of marks is used as for the regular examinations of the college. After passing the examination the student is given an Eksamensbevis (examination certificate) with a separate mark for blacksmith work, horseshoeing, and farriery and with a Hovedkarakter or average and final mark.

#### DEN HANDELSVIDENSKABELIGE LAEREANSTALT HANDELSHÖJSKOLEN (THE SCHOOL OF COMMERCIAL SCIENCE, COMMERCIAL COLLEGE)

The School of Commercial Science or the Commercial College at Copenhagen began in 1917, when the Foreningen til unge Handelsmaends Uddannelse (association for the training of young business men) established a department of commercial science as an evening school in connection with the Köbmandsskolen (Merchants School) at Copenhagen. The connection with the Merchants School was severed in 1922, and 2 years later a regular 2-year day course was begun.

The college began its career in its present form on May 18, 1929, when the evening and day units were drawn more closely together by a scheme of studies approved by the Ministry of Commerce.

The purpose of the college is to offer training which will qualify its students for leading positions in commerce and related fields such as banking, insurance, accounting, auditing, and advertising, and for commercial positions within industry and commerce.

The Commercial College is subsidized by the National Government. It is under the supervision of a board appointed by the Ministry of Commerce and the approval of the latter must be obtained for its courses of study and examinations.

Training is offered in two departments; den Handelsvidenskabelige Afdeling (department of commercial science) and den Handelssproglige Afdeling (department of commercial languages), each of which offers a 2-year course supplemented in the former by the further training in Specialstudier (special studies) and in the latter by Sprogstudier (language studies).

Each of the various lines of training offered in these departments concludes with one of the examinations described below. The written and oral examinations or tests in a subject are conducted by the instructor concerned in the presence of two censors appointed for a 2-year period by the Ministry of Commerce and Industry. Examinations held at the close of the first year of study require the presence of only one censor.

The skriftlige Opgaver (written themes and propositions) are made out by the instructors concerned at least 3 months before the time of the examination and submitted to the censors for approval. For answering each the student is allowed usually 4 hours. One may not present himself for the same examination more than three times.

The marks used in grading are the same as those used in the commercial schools of the country and are given below with the indicated numerical value for each. The number in parentheses represents the numerical value of the mark when used as the Gennemsnitskarakter or average and final mark for the examination. In order to pass the examina-

tion this final mark, unless otherwise stated, must be at least five.

ug (excellent)-----	6	(8)
ug+-----	5½	(7½)
mg+-----	5½	(7½)
mg (very good)-----	5	(7)
mg+-----	4½	(6½)
g+-----	4½	(5½)
g (good)-----	4	(5)
g+-----	3½	(3½)
tg+-----	3½	(2½)
tg (pretty good)-----	3	(1)
tg+-----	2½	(+ 1½)
mdl+-----	2½	(+ 4½)
mdl (fair)-----	2	(+ 7)
mdl+-----	1½	(+ 12½)
slet+-----	1½	(+ 17½)
slet (poor)-----	1	(+ 23)

The academic year is divided into two semesters. Most of the examinations are taken at the close of the second semester in May and June.

#### EXAMINATIONS IN THE DEPARTMENT OF COMMERCIAL SCIENCE

*Handelsvidenskabelig Afgangsprøve (leaving examination in commercial science).*—The leaving examination in commercial science marks the completion of the toaarige Studium (2-year course) in the department of commercial science. Admission to preparation for this examination is open:

- (a) To one who has passed the Studentereksamen.
- (b) To one who has passed the Højere Handelseksamen (higher examination in commerce, i.e., the leaving examination from a commercial gymnasium).
- (c) After one semester of successful attendance on probation to a business man who has passed either the Handelseksamen (commercial examination on lower secondary school levels) or the Realeksamen (real examination), who, in addition, has had several years of practical experience and who, during that time in some manner or other, has attained sufficient development and maturity.
- (d) To teachers of commerce who desire additional training, or to one who wishes to become a commercial teacher. In the latter case admission as a regular student occurs only after success during a semester of probational attendance.

The training begins with a two-semester Forkursus (preliminary course of instruction in bookkeeping, commercial

arithmetic, office work, two foreign languages, stenography, and typewriting which the student must pass in order to be permitted to continue commercial study. The second semester of this course is conducted as practical work in an Øvelseskonter (practice office). In addition, preparation for the examination includes the following listed courses among the first three of which a major shall be selected:

- (a) Commercial science including commercial history, commercial technique, traffic in goods, transportation, banking and exchange, insurance, and knowledge of goods.
- (b) Business economics including general business economics, industrial economics and factory organization, organization and technique of advertising, organized selling and market analysis.
- (c) Accounting including office work, political science, and analysis of accounting.
- (d) Industrial economics including the industrial life of Denmark and the necessary fundamentals of statistics and economics followed by a study of the market, industrial policies, and finance.
- (e) Industrial law, including commercial law and legal relations of particular interest to industrial life.
- (f) At least two languages selected from among English, German, French, and Spanish. If the student wishes he may take the other two as optional subjects.

Before he is eligible for the leaving examination a student without previous practical experience must perform at least 2 months of voluntary practical work.

The examination includes an 8-hour written Hovedopgave (main proposition) in the major subject. In addition, there is a written proposition in industrial economics and in each of the languages. If commercial science or business economics is the major there is a written proposition in accounting and if the latter is the major there is a written proposition in business economics. There are 2 oral tests in the major and 1 in each of the remaining subjects.

In grading, the mark for the major proposition counts double as do also the average mark for the two oral tests in the major and the combined mark for either accounting and industrial economics or business economics and industrial economics. In the remaining subjects of the examination there is a separate mark for each written and oral test.

One who has passed the leaving examination in commercial science and who has sufficient practical experience may after

training in one of the special studies offered by the college present himself for the examination for candidate in commercial science.

*Diplomprøven (diploma examination).*—The diploma examination requires at least 2 years of training in one of the Specialstudier (special studies) of commerce, accounting, auditing, banking, insurance, or advertising. The training is more advanced than that required for the leaving examination and is planned mainly for those who are regularly employed and who are interested in early morning or evening classes. Admission to preparation for the examination is open:

- (a) To one who has passed the leaving examination in commercial science and who, in addition, has sufficient practical training.
- (b) To a business man with sufficient practical training who has passed part I of the Embedseksamen in law or in political science (see pp. 35, 38), or the theoretical part of the Revisoreksamen (examination for auditors), or Højere Handelseksamen (higher commercial examination), or who has passed an Adgangsprøve (entrance examination) in industrial economics and industrial law. In addition, one who wishes to study banking or insurance must pass a Saerprøve (special examination) unless he has passed previously Afgangsprøven from Købmandsskolens Bankskole or Forsikringsskole (leaving examination from either the school of banking or of insurance at the Merchants School); and one who wishes to study commerce, accounting, auditing, or advertising must pass an examination in bookkeeping unless he can show by documentary evidence that he already has this preparation.

The examination consists of a main proposition which may take the form either of 4 weeks of home work or of an 8-hour written examination or test. In addition, there are 2 lesser written propositions and an oral test.

In grading, the student receives a separate mark for his oral test and for each of the written propositions with the mark for the main proposition and the oral test counting double. To pass the diploma examination the student must receive a mark of at least "good" for his main proposition as well as for the average for the examination.

One who has passed the diploma examination is entitled after further study to present himself for the examination for candidate in commercial science.

*Handelsvidenskabelig Kandidateksamen (examination for candidate in commercial science).*—One who has passed the

leaving examination in commercial science and thereafter participated in the instruction in one of the special studies to a sufficient extent and who, in addition, has had sufficient practical experience may complete his training at the Commercial College with the examination for candidate in commercial science. This examination is open also, after additional study, to one who has passed the diploma examination.

To be eligible for the examination for candidate in commercial science, the student, after consultation with the instructor concerned, must write a thesis based on independent research in his Specialstudium (field of special study). If the thesis is approved the student takes an oral examination the object of which is to test his general and special knowledge and his understanding of the various phases of industrial life. The oral examination may be taken at any time within the two semesters of the academic year and is graded simply Bestaaet (passed) or Ikke bestaaet (not passed).

*Revisoreksamen* (examination for auditors), also called *Prøven for statsautoriserede Revisorer* (examination for auditors licensed by the National Government).—The examination for auditors is conducted by a Revisorkommision (Auditors' Commission) appointed by the Ministry of Commerce and Industry. The application for permission to take the examination is sent to the Commission accompanied by certificates of birth and conduct, and by a certification that the applicant has been employed for at least 3 years by a licensed auditor or that he has received dispensation from this requirement from the Ministry of Commerce. After passing the examination one may obtain from the Ministry of Commerce and Industry a Beskikkelsesbrev (letter of appointment) as a licensed auditor.

The examination consists of a teoretisk Del (theoretical part) and of a praktisk Del (practical part) which must be taken within 5 years after the theoretical part.

The theoretical part of the examination consists of a written and an oral test in general study of industry, general commercial and maritime law, accounting, and the technique of auditing. Exemption from this part of the examination may be granted to one who has passed the Embedseksamen in law or the examination in political science at the university.

or to one who has passed the diploma examination at the Commercial College.

The practical part of the examination consists of 4 propositions for 1 or 2 of which the student may substitute 1 or 2 reports based on work connected with his practical experience in bookkeeping and auditing. After the reports and practical work have been approved the student must be ready to answer in an oral examination questions concerning the reports and practical work.

The marks used in grading the examination range from 0 to 6. In the theoretical part of the examination the student receives one mark for each subject. No mark may be less than 2, and to pass the examination there must be a total of at least 15.

In the practical part of the examination one mark is given for the oral test and for each practical proposition and report. No mark may be less than 2 and a total of at least 18 points must be received for this part of the examination.

#### EXAMINATIONS IN THE DEPARTMENT OF COMMERCIAL LANGUAGES

*Handelssproglig Afgangsprøve (leaving examination in commercial languages).*—The leaving examination in commercial languages marks the completion of a 2-year course in the department of commercial languages. Admission to preparation for this examination is open:

- (a) To one who has passed the Studentereksamens in the modern language line.
- (b) To one who has passed the Højere Handelseksamen (higher examination in commerce), i.e., the leaving examination from a commercial gymnasium.
- (c) To one who has passed either the Handelseksamen (commercial examination) or the real examination and who in an Optagelsesprøve (entrance examination shows himself to possess the required language qualification.

The work begins with a two-semester Forkursus (preliminary course) including bookkeeping, commercial arithmetic, office work, stenography, typewriting, commercial history, commercial technique, commercial law, industrial economics, and practical work in a practice office. The course concludes with a written examination in bookkeeping and in industrial economics and with oral tests in each of commercial history, commercial technique, and commercial law.

The main subjects of the course are English, German, French, and Spanish of which one, preferably English or German, shall be studied as the Hovedsprog (major language) and two as Bisprog (minor languages). The fourth language may be selected as an optional subject.

The examination in the major consists of an 8-hour written Hovedopgave (main proposition) for which the student may have the use of aids; a proposition in commercial correspondence and a translation from Danish to the foreign language without aids; and of a test in stenography.

In each of the remaining languages there is a proposition in the foreign language and a translation from Danish into the foreign language. No aids are to be used for the first proposition but dictionaries may be used for the second.

There are also examinations in Danish in stenography and typewriting.

The oral examination in the major consists of a translation from the foreign language into Danish and of two tests in conversation. In each of the remaining languages there is a translation from the foreign language into Danish and one test in conversation.

In grading, the mark for the major proposition is doubled as is also the average mark for the two conversation tests in the major. In the other languages a separate mark is received for each oral and written test. The student also receives a mark for stenography and typewriting in Danish.

One who has passed the leaving examination in languages is eligible for further language study in preparation for the examination for translators.

*Korrespondentprøven (examination for correspondents).*—In its school for correspondents and its school for translators the department of commercial languages offers training in Sprogsstudier (language studies) which corresponds to the Specialstudier of the department of commercial science. The training is more advanced than that offered for the leaving examination and is intended mainly for those whose regular employment permits attendance only at early morning or evening classes. The language studies include English, German, French, and Spanish.

To be admitted as a student in English or German in the school for correspondents the applicant must have passed

one of the following listed examinations and received a mark of at least "good" in the language concerned:

- (a) *Købmandsskolens Afgangsprøve i fremmede Sprog* (leaving examination in foreign languages from the Merchants School).
- (b) *Handelseksamten* (commercial examination).
- (c) *Højere Handelseksamten* (higher commercial examination).
- (d) Leaving examination in commercial science or the leaving examination in commercial languages.

Others may be admitted on examination.

The requirements for admission as a student in French are the same as those for English and German except that one who has passed the *Studentereksamten* in the mathematics-science or the classical language line is also eligible.

An applicant may be admitted as a student in Spanish without previous knowledge of the language when he can show that he otherwise possesses the maturity and qualification necessary for following the instruction.

Preparation for the examination for correspondents which is offered in English, German, and French consists normally of a 2-year course of 4 hours of instruction per week.

The examination includes an oral examination in conversation and four written propositions consisting of:

1. Translation of commercial letters in Danish into the foreign language.
2. Preparation of commercial letters in the foreign language according to an outline.
3. Translation of a general passage into the foreign language.
4. Translation of a passage of general mercantile content from the foreign language into Danish.

In grading, one mark is given for each written proposition and for the oral examination. The mark for propositions no. 1 and no. 2 are combined to form a *Hovedkarakter* (final mark) in correspondence which counts double. In order to pass the examination the *Hovedkarakter* in correspondence as well as the *Hovedkarakter* or average and final mark for the entire examination must be at least *mg-+* (very good minus).

*Spanskprøven* (examination in Spanish).—The examination for correspondents is not offered in Spanish. In its stead there is the examination in Spanish which is similar in content to the examination in this language in the leaving

examination in commercial languages (see p. 96). Preparation for this examination may be completed with a 2-year course of 4 hours of instruction per week.

*Translatoreksamen (examination for translators).*—Admission to preparation for the examination for translators is open to one who has passed the leaving examination in commercial languages with the language concerned as the major, or to one who has passed the examination for correspondents. Admission is granted also to one who has passed an entrance examination or to one who has shown that he can follow successfully the instruction offered.

The examination may be taken in English, German, or French. It requires from 2 to 3 years of 4 to 5 hours of instruction per week of preparation beyond the requirements of the examination for correspondents. Preparation in the various phases of the major language includes general language, mercantile, legal, and technical language. The other subjects of the examination are civil law and sociology including the history, culture, industrial life, and sociological conditions of the country of the major language.

Application for permission to take the examination is sent to the Ministry of Commerce and Industry accompanied by certificates of birth and conduct. The application must include an account of the applicant's academic training, the manner in which he acquired knowledge of his major language, and the handbooks used. As a rule the application shall contain also the signature of one or more persons who declare themselves willing to conduct the oral examination.

The written examination consists of five 4-hour propositions of which 1 shall be a general language test; 3 translations of commercial, legal, and technical passages or tests; and 1 within the examinee's field of special study. At least two of the propositions must be translations from Danish to the foreign language. No aids are to be used in the general language test or in commercial correspondence; a dictionary may be used in the remaining tests.

The oral examination includes tests in general language, in the interpretation of a passage from the student's field of special study, in his ability as an interpreter, and in the sociological conditions of the country of his major language.

In grading, the student receives for each of his written and oral tests one of the following listed marks with the indicated numerical value:

ug (excellent) .....	10	tg (pretty good) .....	1
mg (very good) .....	7	mdl (fair) .....	+2
g (good) .....	4	slet' (poor) .....	+5

The Hovedkarakter or final mark for the examination is the total of the marks received in the individual tests and is expressed on the basis of its numerical value by one of the following terms:

Bastaaet (passed) .....	54-75.
Bastaaet med Udmaerkelse (passed with distinction) .....	76 and above.

One who has passed the examination for translators and who is at least 25 years of age and a citizen of Denmark may obtain from the Ministry of Commerce and Industry a Bevilling (license) as a kgl. autoriseret Translatör (translator with royal authorization). The requirement as to citizenship may under very special circumstances be set aside by the Ministry.

*Faglaerereksamen i Handelsfag (special or professional examination for teachers of commercial subjects).*—The special or professional examination for teachers of commercial subjects is offered in the following listed subjects representing both departments of the college:

Arithmetic	Study of production, knowledge of goods, and salesmanship
Bookkeeping	
Office work and study of commerce	German
Office work, stenography, and typewriting	English
	French

Admission to this examination in the nonlanguage subjects is open to an applicant who has passed one of the Embedselskaminer of the university, or the Laerereksamen (teachers examination), or Faglaerereksamen (special teachers examination). It is open also to one who has not passed one of these examinations but who is at least 21 years of age, has had at least 1 year of practical experience in commercial work, and who either has other training approved by the Ministry of Commerce and Industry or who has passed one of the following listed examinations.

- (a) Studentereksamens
- (b) Højere Handelseksamens (higher commercial examination)
- (c) Realeksamens (real examination)
- (d) Handelseksamens (commercial examination)

Admission to this examination in the language subjects is open to one who has passed a Skoleembedseksamens (see pp. 13, 23, 29), Faglaerereksamens, or the examination for translators in the language concerned.

The professional examination for teachers of commercial subjects consists of a teoretisk Prøve (theoretical examination) and of a Prøve i Undervisningsfaerdighed (examination in skill in instruction).

Eligibility to the theoretical part of the examination requires, in general, a knowledge of the study of industry and of information in the various commercial school subjects corresponding at least to the requirements of the general examinations in commerce. The examination consists of written tests in the subjects included in the curricula of the commercial schools and of an oral examination on the material read.

The examination in skill in instruction requires knowledge of a text in didactics and the completion of a course in skill in teaching. The examination consists of an oral examination on the material read and of an evaluation of the candidate's teaching ability.

#### DEN FARMACEUTISKE LAEREANSTALT (THE PHARMACEUTICAL INSTITUTE)

The Pharmaceutical Institute of Copenhagen was founded in 1892. It is a national institution aiming to offer advanced pharmaceutical instruction on scientific foundations and to further the development and the practical use of pharmaceutical and related knowledge.

The institute is under the immediate direction of a director and of its Laererråad (faculty council). The former is appointed by the Ministry of Education and must be a man of pharmaceutical training; the latter is composed of the director, the permanently appointed members of the teaching staff, and of the Lektor (lecturer) in pharmacy.

Pharmaceutical training in Denmark consists of 2 to 2½ years of practical and theoretical training in the work of a

druggist through service as a Discipel (pupil) at a drug store followed by 2 years of study at the Pharmaceutical Institute.

One who wishes to take up pharmaceutical study and who has the necessary qualifications must make arrangements with a druggist who is willing to accept him as an apprentice and to assume the responsibility of his training in preparation for the *Medhjaelperekamen* (assistants' examination) with which this period of training ends. Through an agreement between the Druggist Association of Denmark and the Danish Pharmaceutical Association the number of those to be admitted to this training is limited. In 1933 the number was 65.

*Requirements for admission to pharmaceutical study.*—Academic qualification for admission to pharmaceutical study is dependent on having passed one of the following listed examinations:

- (a) *Studentereksamens* in the mathematics-science line.
- (b) *Studentereksamens* in either the classical or modern language line.
- (c) *Almindelig Forberedelseseksamen* (general preliminary examination) (see p. 12), with English, German, and French, and with a total of at least 80 grade points of which 17½ shall be in Danish, and in which the mark "good" (10 points) has been received in Danish composition; or the general preliminary examination with two of the above-mentioned languages and with a total of at least 75 grade points including those mentioned above in Danish, supplemented with a special examination in the third language.
- (d) *Real eksamen* (real examination) or *Pigeskoleeksamen* (girls' school examination) with English, German, French, and practical arithmetic and mathematics with supplementary examinations in one or more of these subjects.

With preparation according to (a), (c), or (d), one must have passed also the special examination in Latin for pharmacists unless Latin was included in the middle or real school examination; preparation according to (b), (c), or (d), requires, in addition, the supplementary examinations in mathematics and natural science for pharmacists.

#### DEGREES IN PHARMACY

The degrees in pharmacy are:

*Examinatus* or *examinate pharmacie* (*examinée in pharmacy*), also called "Medhjaelper" (assistant), requires 2 to 2½ years of practical and theoretical training as a pupil and

apprentice in a drug store beyond the Studentereksamens and success in the Medhjaelperekamen (assistants' examination). Prior to May 1, 1934, a period of 3 to 3½ years was required.

*Candidatus* or *candidata pharmacie* (*candidate in pharmacy*), usually written "cand. pharm.", requires 2 years of study at the Pharmaceutical Institute beyond the Medhjaelperekamen and success in the farmaceutiske Kandidateksamens (examination for candidate in pharmacy).

#### EXAMINATIONS IN PHARMACY

The examiners and censors for the examinations in pharmacy are appointed for a 3-year period by the Ministry of Education from among instructors of the Pharmaceutical Institute and from among druggists. The examinations and tests are conducted ordinarily by the instructor or examiner in the presence of two censors.

*Medhjaelperekamen* (assistants' examination).—The assistants' examination is offered in April and October of each year. The training in preparation for the examination is independent of the Pharmaceutical Institute except that the institute is advised by the druggist concerned as to who has been admitted or dropped from apprenticeship. However, part of the examination is conducted by instructors of the institute and application for permission to take the examination must be handed in to the director of the institute on or before the first day of the month preceding that of the examination, accompanied by the following listed documents:

- (a) The Discipel-Indskrivningsbevis (certificate of registration as a pupil).
- (b) A Laererbrev (letter of apprenticeship) written by the druggist at the close of the period of apprenticeship and containing a report on the theoretical and practical training of the pupil. If the training was taken under the direction of several druggists there must be an attestation from each. One who, in a previous attempt, has failed to pass the examination must include a certificate showing that he has performed the ordinary work of a pupil at a drug store for at least 4 months since his previous attempt.
- (c) A laboratory journal prepared by the pupil during his period of training containing a chronological and dated account of all laboratory work performed during the period of apprenticeship and a description of the production of at least 35 different galenic preparations of various types, and of at least 15 other different chemical preparations.

- (d) An herbarium of about 150 varieties of plants identified by the pupil and prepared during his period of training.

The examination consists of 3 practical and 6 oral Pröver (tests). The praktiske Pröver (practical tests) are conducted in the laboratory of a drug store by one or more men of pharmaceutical training and include:

- (a) The preparation of at least 2 and the appraisement of at least 4 prescriptions.
- (b) The production of at least 2 medicines or lighter preparations.
- (c) The identification and examination of 2 unnamed officinal substances.

For this part of the examination the pupil may have the use of the Pharmacopœia.

The mundtlige Pröver (oral tests) are public and are conducted by instructors of the Pharmaceutical Institute except for the test in reading of prescriptions and pharmacopœia which may be conducted by a man of pharmaceutical training not connected with the institute. They include a test in each of reading of prescriptions and translation from the Latin Pharmacopœia of Denmark, law concerning medicine and drugs, pharmacognosy, botany, chemistry, and technique.

The marks used in grading have the same numerical value as the subject marks in the examination for candidates in pharmacy. (See p. 106.) One mark is given for each test. The Hovedkarakter or final mark for the examination is the total of the points for the individual tests and is expressed on the basis of its numerical value by one of the following terms:

Förste Karakter (first mark) .....	57 and above.
Anden Karakter (second mark) .....	45-56%.

To pass the examination the student must receive at least 12 points for the practical tests and at least 45 points for the entire examination.

One who has passed this examination is eligible for a position as assistant in a drug store and also for further training at the Pharmaceutical Institute.

*Farmaceutisk Kandidateksamen (examination for candidates in pharmacy).*—As already indicated, admission to preparation for the examination for candidate in pharmacy is dependent on having passed the Medhjaelpereksamen. Prep-

aration for the examination for candidate in pharmacy begins on November 1, every second year, and includes instruction in the following listed subjects:

1. Chemistry: General, inorganic, organic, and pharmaceutical.
2. Pharmacognosy.
3. Botany.
4. Pharmacy.
5. Physics.
6. Bacteriology and technique of sterilization, and in other subjects connected with pharmacy which the Ministry of Education may prescribe.

The examination is offered regularly during September-October every second year on the completion of the 2-year course. For those who desire a reexamination or who were not able to take the regular examination an extraordinaer Eksamens (extraordinary examination) is offered 6 months later.

Part of the examination consists of Kursusarbejder or practical work performed during a regular course. For such practical work the student receives one mark in each of the courses named below. The marks are included in the final evaluation in the examination either as subject marks in subjects in which no further examination is offered or as part of the final mark in examination subjects.

- (a) Chemical preparation.
- (b) Practical botany: Morphological-anatomical study of plants.
- (c) Qualitative inorganic chemical analysis.
- (d) Quantitative inorganic chemical analysis.
- (e) Organic chemical analysis.
- (f) Chemical pharmaceutical study including exercises in technical pharmacy.
- (g) Practical pharmacognosy.
- (h) Practical physics including a written proposition on subjects from the practical exercises and on subjects considered in connection therewith.

In addition to the practical work in these courses the examination for candidates in pharmacy consists of 2 written, 5 practical, and 7 oral Eksamenspröver (examination tests).

The written tests include two 2-hour propositions in chemistry or 1 in chemistry and 1 in pharmacy. The propositions are the same for all students participating in the examination and are to be answered without the use of aids.

The practical tests include:

- (a) A qualitative inorganic chemical analysis.
  - (b) A quantitative inorganic chemical analysis.
  - (c) An organic chemical analysis.
  - (d) A chemical pharmaceutical investigation of one or more substances.
  - (e) A 4-hour test in practical pharmacognosy consisting of a macroscopic analysis and the preparation of a written report of the findings. The report is to be accompanied by the microscopic preparations on which it is based.
- Each test is to be completed within 12 hours, 2 of which may be used for the preparation of a written report explaining the procedure and the results attained.

The oral tests are public and include 2 tests in chemistry and 1 in each of pharmacognosy, botany, pharmacy, physics, and bacteriology with the technique of sterilization.

The designations of the marks used in grading fall into an hierarchical arrangement in which *Eksamenskarakter* (examination mark) represents the mark given for a subject in an oral, written, or practical test; *Fagkarakter* (subject mark) consisting of the average of its *Eksamenskarakterer*, the final mark for a subject; and the *Hovedkarakter* which is the average of the *Fagkarakterer*, the final mark for the examination. Below are listed the examination marks with the numerical value of the subject marks enclosed in parentheses:

ug (udmaerket godt).....	(excellent).....	6...	(8)
ug+ (udmaerket godt minus).....	(excellent minus).....	5½...	(7½)
Mg+ (meget godt plus).....	(very good plus).....	5½...	(7½)
mg (meget godt).....	(very good).....	5...	(7)
mg+ (meget godt minus).....	(very good minus).....	4½...	(6½)
g+ (godt plus).....	(good plus).....	4½...	(5½)
g (godt).....	(good).....	4...	(5)
g+ (godt minus).....	(good minus).....	3½...	(3½)
tg+ (temmelig godt plus)...	(pretty good plus)...	3½...	(2½)
tg (temmelig godt).....	(pretty good).....	3...	(1)
tg+ (temmelig godt minus).....	(pretty good minus).....	2½...	(+ 1½)
mdl+ (maadelig plus).....	(fair plus).....	2½...	(+ 4½)
mdl (maadelig).....	(fair).....	2...	(+ 7)
mdl+ (maadelig minus).....	(fair minus).....	1½...	(+ 12½)
slet+ (slet plus).....	(poor plus).....	1½...	(+ 17½)
slet (slet).....	(poor).....	1...	(+ 23)

On the basis of its numerical value the final mark for the examination is expressed in one of the following terms:

1ste Karakter med Udmaerkelse (first mark with distinction)..... 7½ and above.

1ste Karakter (first mark) ..... 6½ to 7½.  
2den Karakter (second mark) ..... 5 to 6½.  
To pass the examination the final mark must be at least 5.

One who has passed the examination for candidate in pharmacy, who is at least 21 and not over 55 years of age, who is a citizen of Denmark, and of good character may become an Apoteker (druggist) provided he is not a practicing physician, dentist, or veterinarian. One connected with a concern producing medical goods is barred also from practicing as a druggist unless special dispensation has been received from the Ministry of the Interior.

**DET KONGELIGE AKADEMI FOR DE SKÖNNE KUNSTER**  
(THE ROYAL ACADEMY OF FINE ARTS)

The history of the Royal Academy of Fine Arts at Charlottenborg, Copenhagen, may be traced to a petition presented to King Frederik IV in 1701, for protection of eine regulierte societet (a regulated society). In 1754 the academy was organized with a preparatory department of two classes and in 1814 it received its present name. A special school connected with the academy was established for women in 1888, with separate instructors. In 1908, the academy was opened to women.

According to royal regulations the academy shall work for the promotion of art in Denmark partly as an institution of higher training in art and partly as Statens Raadgiver i kunstneriske Spørgsmaal (the adviser of the National Government on questions of art). The academy is under the supervision of the Ministry of Education and under the immediate direction of a director, an administrator, and the Akademieraad (academy council). The latter is composed of 18 members including professors of the academy and a number of artists elected from among the members of the academy.

Instruction at the academy is offered in two departments—the lower department or Normalskolen (normal school), and den Højere Skole (the higher school or upper department). The normal school includes:

- Malerskolen (school of painting).
- Billedhugerskolen (school of sculpture).
- Bygningsskolen (school of architecture).

The academic year consists of two semesters: The first from October 1 to December 22; the second from January 7 to April 30, for the schools of painting and sculpture, and to May 31 for the school of architecture. The latter requires also a summer course in survey of architecture and in surveying and leveling.

*Malerskolen* (school of painting).—Before an applicant for admission to the school of painting is admitted he must present—

- (a) Copies of shaded drawings with a statement from the instructor concerned that the drawings were performed by the pupil.
- (b) Copies of the applicant's own independent work in oil or in water color.
- (c) A certificate of having completed geometry, projection drawing, and the first 12 drawings of linear perspective, accompanied with drawings.

The first 2 years of training include studies in light and shade; model studies in drawing, painting, sketching, and drawing from memory; composition work; perspective; ornamental art; anatomical drawing; and history of art and style.

The training of years 3 and 4 includes drawing and painting from models and classical art, and composition work based mainly on historical, Biblical, and classical motifs; the required minor subjects, chemistry of color and technique of material, and history of art, including a survey of the history of architecture; and the optional minor subjects, graphic art, anatomy of animals, the art of weaving, and history of culture including mythology.

Promotion from class 2 to class 3 is dependent on having the work completed during the last year approved by a special committee; on having passed an examination in anatomical drawing part I; and on having completed the assigned work in perspective drawing, and history of art and style.

An *Afgangsbevis* (leaving certificate) from the school of painting is granted after the work completed during year 4 has been approved by a special committee; and after the presentation of certificates of having passed the examination in anatomical drawing part II, and of having completed the course in history of art and in the elementary technique of materials.

*Billedhuggerskolen* (school of sculpture).—An applicant for admission to the school of sculpture must present samples of work produced in class with a statement from the instructor that they represent the pupil's own work; samples of independent work; and a certificate of academic qualification similar to that required for admission to the school of painting.

The instruction of years 1 and 2 includes:

1. Modeling from a model and classic sculpture.
2. Modeling of portraits in relief or bust.
3. Drawing from a model.
4. Drawing of portraits.
5. Anatomical drawing part I.
6. Perspective.
7. Instruction in the history of art and style.

The instruction of years 3 and 4 includes:

1. Modeling from a model and classic sculpture.
2. Drawing from a model and classic sculpture.
3. Decorative modeling and drawing.
4. Drawing of plants and animals.
5. Anatomical drawing part II.
6. History of art.
7. Study of materials.

The requirements for promotion from class 2 to 3 and for a leaving certificate from the school of sculpture are the same as those for the school of painting except that no certificate is required of having completed the course in elementary technique.

*Bygningsskolen* (school of architecture).—Admission to the school of architecture is dependent on one of the following listed requirements:

1. To have passed the Studentereksamen in mathematics-science with a mark of at least "good" in mathematics and in physics, or to have passed the Adgangsksamen (admission examination) to the Polytechnical Institute. To be admitted it is necessary also to present 6 projection drawings; 6 free-hand drawings in block, and a contour drawing of a vase. The drawings should be 50 by 65 centimeters.
2. Admission may be granted to an applicant who has not passed one of the examinations mentioned above, but who has passed examinations at the academy in mathematics, chemistry, and physics. The requirements as to drawings are the same as for no. 1.

3. One who has completed the Dagskole for Bygningshaandvaerkere (day school for building craftsmen) of a technical school and fulfilled its requirements may be admitted to class III of the school of architecture provided he passes an examination in the general school subjects meeting in each at least the requirements of the real or modern examination; or an examination at the academy in Danish, history, and a foreign language meeting in each the requirements of the real examination; and presents a certificate of having had at least 8 months of practical work in craftsmanship.

During the first 3 or 4 years instruction at the school of architecture is conducted on a day-school basis; during the 2 or 3 following years it is conducted on an evening and a day-school basis in order to accommodate students who are doing practical work with architects. Ordinarily the course at the school may be completed in 6 years.

The following plan of study gives the subjects of instruction included in the training of each year with the number of hours per week.

TABLE 22.

Subject of instruction	Number of hours of instruction per week					
	Class I, year 1	Class II, year 2	Class III, year 2	Class IV		
				Year 4	Year 5	Year 6
1	2	3	4	5	6	7
Projection drawing.....	8					
Perspective.....		2	6			
Architecture.....	18	12	17	124		
Interior decorating and furniture.....			2		2	2
Ornamental gardening.....			2		2	2
City planning.....			2		2	2
Survey and style (including restoration).....	6	6	4	16		
Freehand drawing of ornaments.....	5	3	8			
Figure drawing.....				9		
Script.....				1		
Color.....				2		
History of art, culture, and architecture.....	1	1	4	2	2	2
Materials.....	4	2				
Statics.....	6	10				
Engineering in home building.....		6				
Estimation and bookkeeping.....		4				
Building regulations.....		2				
Social economics.....			2			
	48	48	48			

<sup>1</sup> These are day-school hours. Students who wish may arrange to have them distributed to cover a 3-year period.

During the summer between the second and third years of training the student also takes a course in survey of archi-

ecture, and in surveying and leveling. In case this arrangement should interfere with the pupil's practical work the courses may be taken during the following summer.

Promotions are based on success in examinations, or especially in the upper classes, on the work produced. In subjects in drawing the student may submit also work produced outside of the academy.

The *Afgangspröven* (leaving examination) consists of drawings for a building project and two sketches to be worked out by the student without guidance during the last semester.

The student is not to be allowed more than four attempts to pass the examination.

*Den höjere Skole* (*the higher school or upper division*).—The purpose of the upper division is to offer to a talented pupil who has completed one of the schools of the lower division opportunity for advanced study. This opportunity may be extended by the faculty council also to one who has not completed the lower division but who, through several years of work in art, has displayed maturity which from the viewpoint of technique and art places him on a level with graduates of the lower division.

Instruction in the upper division may be completed in 2 years. It includes in the three lines of art offered the subjects indicated for each:

For students in painting and in sculpture:

- (a) Advanced instruction in the major subjects of the lower division with special reference to the development of the student's qualifications for larger composition assignments.
- (b) Monumental embellishment—ornamental or in figures. This may include:

For students in painting:

In part, continued living model studies, figure, animal, landscape, or ornamental compositions independent of room; in part, composition for room decoration with execution on flat surface and work in various materials; eventually fresco, mosaic, glass painting, ceramics, etc.; as well as designs for books, furniture, and wall paper.

For students in sculpture:

In part, relief, monument, figure, and ornament compositions independent of room; in part, compositions for room decoration and work in various materials including eventually stone, bronze, and wood.

## (c) Continued lectures in the history and theory of art.

For students in architecture:

Lectures and practical work in the solution of larger problems or tasks in architecture to which may be added a number of special subjects such as theory of architecture, city planning, ornamental gardening, interior decoration and furniture, and archaeology and restoration.

## TANDLAEGESKOLEN (SCHOOL OF DENTISTRY)

The School of Dentistry was established by royal regulation on June 19, 1888. It is a national institution under the supervision of the Ministry of Education and under the immediate direction of its Laererraad (faculty council) whose chairman, appointed by the Ministry of Education for a period of 6 years, is the Forstander (superintendent of the school).

The academic year begins on September 1 and closes on June 30. Admission of new students occurs on September 1 and is limited by the accommodations of the school to 35 per year.

*Requirements for admission.*—To be eligible for admission the applicant must be at least 16 years of age and have passed one of the following examinations:

- (a) The almindelige Forberedelseseksamen (general preliminary examination) with a supplementary test in Latin.
- (b) A public examination equivalent to the above.
- (c) Realeksamen (real or modern examination) or Pigeskoleeksamen (Girls' school examination) with English, German, French, practical arithmetic and mathematics, and with a supplementary examination in one or more of these subjects.

*Tandlaegeeksamen (examination for dentists).*—Preparation for the examination for dentists may be completed in 3 years. It includes the subjects of instruction listed below with the indicated requirements for each:

- (a) *Chemistry.*—Three hours per week during the first semester; 1 to 2 hours per week during the second semester, with 3 hours per week in addition for practical work. Includes inorganic chemistry and the fundamentals of organic chemistry.
- (b) *Anatomy.*—Two hours per week during semesters 1, 2, and 3. Fundamentals of anatomy with special study of the anatomy of the teeth, mouth, and adjoining parts.

- (c) *Physiology*.—One hour per week during semesters 2 and 3. Fundamentals of physiology with special study of the sections of particular interest to dentists.
- (d) *Pharmacology*.—One hour per week during semesters 4, 5, and 6. Medicines—characteristics and action, dose, prescription, poisons with antidote and treatment in case of poisoning.
- (e) *Propaedeutical instruction in dentistry*.—Twelve hours per week during semesters 2 and 3. A preparatory course including elementary lectures, practical work, and demonstrations on normal and abnormal teeth formations and positions, diseases of the teeth and their treatment, with particular attention to the methods of diagnostic examination.
- (f) *General surgery and pathology*.—Four hours per week during semesters 3, 4, 5, and 6. Lectures, demonstrations, and written tests in fundamentals of general surgery including wounds and their treatment; fever; forms of inflammation; infection and infectious diseases, acute, chronic, and those of surgical significance; general surgery of bone, muscle, nerve, and vascular system; swellings. General study of operations including antiseptics, incision, suture, haemostasis, amputation, resection, etc. Special study in all instances of phases of particular interest to dentists.
- (g) *Special surgery and surgical clinic*.—Four hours per week of lectures during semesters 4, 5, and 6, with clinical exercises during semesters 5 and 6. Diseases of the mouth and teeth including extracts of particular interest to dentists from special surgery.
- (h) *Filling of teeth and clinic for filling of teeth*.—Lectures 3 hours per week during semesters 4, 5, and 6, with clinical exercises in addition. Clinic open 4 hours daily, with instructor present 3 hours and the assistant the entire time. Teeth ailments which occasion filling, methods and materials, practical exercises in filling of teeth.
- (i) *Elementary prosthetics*.—Five hours per day during semesters 1, 2, 3, and 4. Lectures and written tests in the theory and history of prosthetics; practical work with the materials used in prosthetics, and the making of dentures with the use of gold and other materials.
- (j) *Advanced prosthetics*.—Four hours per day during semesters 5 and 6. Theoretical and practical instruction in crown and bridge work, regulation of teeth and regulation apparatus, enamel work, palate obturators, jaw prosthetics, etc.
- (k) *Bacteriology*.—A 2-hour course of 12 lessons offered at the close of semester 5 and required of all who wish to take the examination in dentistry. Includes practical demonstration of bacteriological methods, demonstration of bacterial forms, with special reference to bacterial phenomena of particular interest to dentists.

The examination consists of four parts—the tests in chemistry, the tests in anatomy and physiology, the tests in elementary prosthetics, and the *afsluttende Prøver* or final examination. To be eligible for the tests in anatomy and physiology the student must have passed the tests in chemistry; likewise before he may participate in instruction offered at the clinics for surgery and for the filling of teeth he must have passed the tests in anatomy and physiology. On the other hand, even if he has not passed the tests in elementary prosthetics he may begin preparation for the final examination and take the tests in elementary prosthetics at the end of the following year together with the final examination.

Unless the final examination is taken within 3½ years after the tests in anatomy and physiology are completed the student will have to pass a reexamination in the latter subjects before he is eligible for the final examination.

The examination consists of written, oral, and practical *Prøver* or tests. The oral and practical tests are conducted by the instructor of the subject concerned assisted by two censors appointed by the Ministry of Education. The written test is conducted in a similar manner but the *Opgave* or proposition is made out by the faculty council.

*Prøven i Kemi* (*tests in chemistry*).—The tests in chemistry are offered at the end of the second semester of dental training. To be eligible for them the student must present evidence of having completed the required work at the chemical laboratory. The tests are oral and include the fundamentals of inorganic and organic chemistry. For these tests the student receives one mark.

*Prøven i Anatomi og Fysiologi* (*tests in anatomy and physiology*).—The tests in anatomy and physiology are taken regularly at the close of the third semester of training in dentistry. They are oral and include in anatomy the fundamentals of general anatomy and special knowledge of the anatomy of the teeth, mouth, and adjoining parts; in physiology the fundamentals of physiology and special knowledge of sections pertaining to dentistry. In grading, one mark is given for each subject with that for anatomy counting double.

*Prøven i elementær Proteselaere* (*tests in elementary prosthetics*).—Preparation for the tests in elementary prosthetics

may be completed by the end of the fourth semester of training in dentistry. To be eligible for them the student must present evidence of having attended regularly instruction at the clinics and laboratories and of having completed the required work. The tests are oral and practical. They include the production and fitting of dentures of various materials for a patient; and a diagnostic examination of the mouth of a patient followed by a recommendation for prosthetic treatment. In grading, the mark received for these tests is doubled.

*Den afsluttende Prøve (the completion or final examination).*—The completion or final examination of the Tandlaegeeksamen is offered at the close of the 3-year course in dentistry. It includes the tests indicated in each of the following listed subjects:

- (a) *General surgery.*—An oral test covering the fundamentals of general surgery with special emphasis on mouth and dental surgery. One mark is given for this test.
- (b) *Pharmacology.*—An oral test on medicines used in dental practice including their characteristics and action, dose, and prescription; and for poisons, the antidote and treatment in case of poisoning. One mark is given for this test.
- (c) *Advanced prosthetics.*—An oral test on the preparation and fitting of crowns, bridge work, teeth on pegs, apparatus for teeth regulation, palate obturators, enamel work, also on the regulation of teeth and work in prosthetics in general included in the ordinary practice of a dentist. For this test, one mark is given.

To be eligible for the test, the student must present evidence of having attended regularly instruction at the clinic and laboratory and of having completed the required work.

(d) *Special surgery with surgical clinic.*—Practical and oral tests including:

- 1. A clinical examination of the teeth, mouth, and adjoining parts of a patient; followed by a description of the ailment, diagnosis, and recommendation for treatment.
- 2. One or more extractions of teeth.
- 3. The tests must include also a question in special surgery.

For these tests one mark is given which counts double.

Permission to take the tests is dependent on a certificate of regular attendance and of the completion of all required work at the clinic.

(e) *Filling of teeth and clinic for filling of teeth.*—Practical and oral tests including a clinical examination of a patient with a description of the ailment, diagnosis, and recommendation of treatment; and the filling of several teeth using different kinds of materials. For these tests the student receives one mark which is doubled.

To be eligible for the tests the student must present a certificate showing regular attendance and completion of all required work at the clinic.

In addition, the student must answer a 4-hour written Opgave or proposition based on the subjects included in this part of the examination. For this written test he receives one mark based on Orden (order and appearance), language, and spelling, as well as information.

In grading, the following listed marks with the indicated numerical value are used to obtain the Specialkarakter or individual mark for the test or tests in a subject:

Laudabilis prae ceteris	16
Laudabilis	13
Haud illaudabilis Iimi Gradus	8
Haud illaudabilis IIidi Gradus	5
Non contemnendus	+11

The final mark for the examination is expressed by one of the following terms depending on the sum of the marks received in the four parts of the examination:

Bestaaet med Udmærkelse (passed with distinction)	203 and above.
Bestaaet med første Karakter (passed with first mark)	147.
Bestaaet (passed)	112.

A Laege (physician) who wishes to take the examination in dentistry may do so by passing the tests in elementary prosthetics and in the final examination excluding the subjects, general surgery, and pharmacology.

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## E. GLOSSARY OF TERMS

### *Institutions*

- Aarhus Elektroteknikum—Electrotechnicum at Aarhus.  
Bygningsteknikum i Horsens—Building Technicum at Horsens.  
Den Farmaceutiske Laereanstalt—The Pharmaceutical Institute.  
Den Handelsvidenskabelige Laereanstalt, Handelshøjskolen—The School of Commercial Science, Commercial College.  
Den Kongelige Veterinaer og Landbohøjskole—The Royal Veterinary and Agricultural College.  
Den Polytekniske Laereanstalt, Danmarks Tekniske Højskole—The Polytechnical Institute, Technical College of Denmark.  
Det Kongelige Akademi for de Skønne Kunster—The Royal Academy of Fine Arts.  
Det Tekniske Selskabs Skoler i København—Schools of the Technical Association at Copenhagen.  
Folkeskole—folk or primary school.  
Husbygningsteknikum i Odense—Architectural Technicum at Odense.  
Kadetskolen—School for Cadets.  
Københavns Universitet—University of Copenhagen.  
Købmandsskolen—Merchants School.  
Mellemskole—middle school.  
Odense Maskinteknikum—Machine Technicum at Odense.  
Officersskolen—School for Officers.  
Statens Gymnastik Institut—National Gymnastic Institute.  
Tandlaegeskolen—School of Dentistry.  
Universitetsundervisningen i Jylland—University Instruction in Jutland.

### *Faculties and Departments*

- Billedhuggerskolen—school of sculpture.  
Bygningsskolen—school of architecture.  
Dagskole for Bygningshaandvaerkere—day school for building craftsmen (department of a technical school).  
Den handelssproglige Afdeling—department of commercial languages.  
Den handelsvidenskabelige Afdeling—department of commercial science.  
Det filosofiske Fakultet—faculty of philosophy.  
Det laegevidenskabelige Fakultet—the faculty of medicine.  
Det matematisk-naturvidenskabelige Fakultet—faculty of mathematics-science.  
Det rets- og statsvidenskabelige Fakultet—faculty of law and political science or the faculty of law and economics.  
Det teologiske fakultet—the faculty of theology.

- Fagafdeling for bygningsteknisk Ingeniørvidenskab—department of civil engineering.
- Fagafdeling for elektroteknisk Ingeniørvidenskab—department of electrical engineering.
- Fagafdeling for kemisk Ingeniørvidenskab—~~department~~ of chemical engineering.
- Fagafdeling for maskinteknisk Ingeniørvidenskab—department of mechanical motive power engineering.
- Fagraad—departmental faculties.
- Fagraad for de almene Videnskaber—departmental faculty for the general sciences or knowledge.
- Fodselsstiftelsen—obstetrics foundation.
- Højere Skole—the higher school or upper department of the Royal Academy of Fine Arts.
- Købmandskolens Bankskole—school of banking of the Merchants School.
- Købmandskolens Forsikringsskole—school of insurance at the Merchants School.
- Malerskolen—school of painting.
- Normalskolen—normal school or lower department of the Royal Academy of Fine Arts.
- Pastoralseminariet—pastoral seminary.
- Realklasse—real or modern class.

*Special Courses and Lines of Study*

- Andet Kursus—second course.
- Etaarige Kursus for Gymnastiklaerere—the 1-year course for teachers of gymnastics.
- Forkursus—preliminary course.
- Fortsættelseskursus for Dyrlæger—continuation or advanced course for veterinary surgeons.
- Fortsættelseskursus for Landbrugskandidater—continuation or advanced course for candidates in agriculture.
- Fortsættelseskursus i Kulturteknik for Landinspektører—continuation or advanced course in culture technique for surveyors.
- Første Kursus—first course.
- Klassisk-sproglig Retning—classical linguistic line.
- Kursus i Husdyrbrug—course in animal husbandry.
- Kursus i Jordbrugalaere—course in agriculture.
- Kursus i Kulturteknik for Landbrugskandidater—course in culture technique for candidates in agriculture.
- Matematisk-naturvidenskabelig Retning—mathematics-science line.
- Matematisk-fysiske Faggruppe—mathematics-physics subject group.
- Naturhistorisk-geografiske Faggruppe—natural history-geography subject group.
- Nysproglige Retning—modern language line.
- Slutningskursus—completion course.
- Special Kursus—special course.
- Toaarige Studium—the 2-year course.

Tredje Kursus 1ste Afdeling—third course first section.

Tredje Kursus 2den Afdeling—third course second section.

Undervisning for Beslagsmede—instruction for farriers.

*Certificates*

Afgangsbevis—leaving certificate.

Beskikkelsesbrev—letter of appointment.

Bevilling—license.

Bevis—certificate.

Discipel Indskrivningsbevis—certificate of registration as a pupil.

Eksamensbevis—examination certificate.

Laererbrev—letter of apprenticeship.

Saerligt Bevis—special certificate.

*Degrees*

Candidatus juris—candidate in law, usually written "cand. jur."

Candidatus (candidata) magisterii—the degree of candidate attained after passing the Embedseksamen in the faculty of philosophy or in the faculty of mathematics-science; usually written "cand. mag."

Candidatus medicinae—candidate in medicine, usually written "cand. med."

Candidatus (candidata) pharmacie—candidate in pharmacy, usually written "cand. pharm."

Candidatus politices—candidate in political science, usually written "cand. polit."

Candidatus theologiae—candidate in theology, usually written "cand. theol."

Den filosofiske Doktorgrad (doctor philosophiae)—doctor of philosophy, usually written "dr. phil."

Den juridiske Doktorgrad (doctor juris)—doctor of law, usually written "dr. jur."

Den medicinski Doktorgrad (doctor medicinae)—doctor of medicine, usually written "dr. med."

Den tekniske Doktorgrad (doctor technices)—doctor of technology, usually written "dr. techn."

Den teologiske Doktorgrad (doctor theologiae)—doctor of theology, usually written "dr. theol."

Doktorgraden—the degree of doctor, or the doctorate.

Dyrlæge—veterinarian.

Examinatus or examinata pharmacie—examinee in pharmacy.

Forsøgsledere—director of research.

Forstkandidat—candidate in forestry.

Havebrugskandidat—candidate in horticulture.

Kandidat i Forsikringsvidenskab og Statistik—candidate in insurance and statistics.

Kgl. autoriseret Translatør—translator with royal authorization.

Konsulent—consultant.

Landbrugskandidat—candidate in agriculture.

Landinspektør—surveyor.

Magister artium—master of arts, usually written "mag. art."  
Magister scientarium—master of science, usually written "mag. scient."  
Medhjaelper—assistant.  
Mejeribrugskandidat—candidate in dairying.  
Polyteknisk Kandidat—polytechnical candidate, usually written "cand. polyt."  
Veterinær—veterinarian.

#### *Examinations*

Adgangseksamen—entrance examination.  
Adgangsprøve—entrance examination.  
Afgangsprøven—leaving examination.  
Afsluttende Aarsprøve—leaving examination or examination at the close of the year of leaving.  
Afsluttende Eksaminer—completion or final examinations.  
Afsluttende Prøver—final examination.  
Almindelig Forberedelseseksamen—general preliminary examination.  
Civillingeniøreksamen—civil engineer examination.  
Civillingeniøreksamen for Bygningsingeniører—examination for civil engineers.  
Civillingeniøreksamen for Elektroingeniører—examination for electrical engineers.  
Civillingeniøreksamen for Fabrikingeniører—examination for chemical engineers.  
Civillingeniøreksamen for Maskiningeniører—examination for mechanical engineers.  
Den almindelige filosofiske Prøve—the general examination in philosophy.  
Diplomprøven—diploma examination.  
Eksamens for Embedslæger—examination for government physicians or civil service examination for physicians.  
Eksamens for Elektrokonstruktører—examination for electro constructionists.  
Eksamens for Maskinkonstruktører—examination for machine constructionists.  
Eksamens i Forsikringsvidenskab og Statistik—examination in insurance and statistics.  
Eksamensprøver—examination tests or examination.  
Ekstraordinaer Eksamens—extraordinary examination.  
Embedseksamen—professional examination.  
Embedseksaminer—professional examinations.  
En udenlandsk Studentereksamens—the student examination of a foreign country.  
Faglærereksamen—special teachers examination.  
Faglærereksamen i Handelsfag—special or professional examination for teachers of commercial subjects.  
Fagprøven—subject tests or examination.

Farmaceutisk Kandidateksamen—examination for candidate in pharmacy.

Forberedelseseksamen—preliminary “literally preparatory” examination.

Forprøve—preliminary examination.

Handelseksamen—commercial examination on lower secondary school levels.

Handelssproglig Afgangsprøve—leaving examination in commercial languages.

Handelsvidenskabelig Kandidateksamen—examination for candidate in commercial science.

Handelsvidenskabelige Afgangsprøve—leaving examination in commercial science.

Havebrugseksamen—examination in horticulture.

Højere Handelseksamen—higher examination in commerce, i.e. the leaving examination from a commercial gymnasium.

Hovedprøve—major examination or test.

Juridisk Embedseksamen—professional examination in law.

Juridisk Tillægseksamen for statsvidenskabelige Kandidater—supplementary examination in law for candidates in political science.

Konferens—conference.

Korrespondentprøven—examination for correspondents.

Kundskabsprøve—information examination or test.

Legevidenskabelig Embedseksamen—professional examination in medicine.

Leerereksamen—teachers examination.

Leererprøven—teachers examination or teaching tests.

Landbrugseksamen—agricultural examination.

Landinspektøreksamen—examination for surveyors.

Magisterkonferens—master's conference.

Magisterkonferens i den matematisk-fysiske Faggruppe—master's conference in the mathematics-physics subject group.

Magisterkonferens i den naturhistorisk geografiske Faggruppe—master's conference in the natural history-geography subject group.

Medhjælpereksamen—assistants examination.

Mejeribrugseksamen—examination in dairying.

Mellemskoleeksamen—middle school examination.

Mindre Prøver i Hjælpesfag—lesser or minor tests in assisting subjects.

Mundtlige Prøver—oral examinations.

Optagelsesprøve—entrance examination.

Overgangsprøven—promotion examination.

Pigeskoleeksamen—girls' school examination.

Polyteknisk Eksamens for Bygningsingeniører—polytechnical examination for civil engineers.

Polyteknisk Eksamens for Elektroingeniører—polytechnical examination for electrical engineers.

Polyteknisk Eksamens for Fabrikingeniører—polytechnical examination for chemical engineers.

Polyteknisk Eksamens for Maskiningeniører—polytechnical examination for mechanical engineers.

Polytekniske Eksamens—polytechnical examination.  
Praktiske Prøver—practical tests.  
Prøve—test or examination.  
Prøve i Undervisningsfaerdighed—examination in skill in instruction.  
Prøven i Anatomi og Fysiologi—tests in anatomy and physiology.  
Prøven i elementær Proteselaere—tests in elementary prosthetics.  
Prøven i Kemi—tests in chemistry.  
Prøven for statsautoriserede Revisorer—examination for auditors licensed by the national government.  
Prøver i Hjælpefag—tests in assisting or supporting subjects.  
Realeksamen—real or modern examination.  
Revisoreksamen—examination for auditors.  
Saerprøve—special examination.  
Skoleembedseksamen—professional examination for teachers.  
Skoleembedseksamen i den matematisk-fysiske Faggruppe—professional examination for teachers in the mathematics-science subject group.  
Skoleembedseksamen i den naturhistorisk-geografiske Faggruppe—professional examination for teachers in the natural history-geography subject group.  
Skoleembedseksamen i Gymnastik—professional examination for teachers of gymnastics.  
Skovbrugseksamen—examination in forestry.  
Slutprøve—completion or final examination.  
Spanskprøven—examination in Spanish.  
Statsvidenskabelige Eksamens—examination in political science.  
Studentereksamen—student examination.  
Teologiske Embedseksamen—professional examination in theology.  
Teoretisk Prøve—theoretical examination.  
Tillaegsprøve—supplementary examination.  
Translatøreksamen—examination for translators.  
Udvidede Eksamens for Bygningskonstruktører—extended examination for building constructionists.  
Veterinaereksamen—veterinary examination.  
Videnkabelig Modenhedsprøve—scientific maturity examination.

*Terms Used in Grading the Examinations*

anden Karakter (2den Karakter)—second mark.  
anden Karakter af anden Grad—second mark of the second grade.  
anden Karakter af første Grad—second mark of the first grade or degree.  
Bestaa Eksamens—passed the examination.  
Bestaaet—passed.  
Bestaaet med første Karakter—passed with first mark.  
Bestaaet med Udmaerkelse—passed with distinction.  
Bestaaet Studentereksamen—passed the student examination.  
Eksamenskarakter—examination mark.  
Fagkarakter—subject mark.  
Første Karakter (1ste or 1. Karakter)—first mark.

Förste Karakter med Udmaerkelse—first mark with distinction.  
 Gennemsnitskarakter—average mark.  
 Godt—good, usually written "g."  
 Godt minus—good minus, usually written "g+."  
 Godt plus—good plus, usually written "g-."  
 Hovedkarakter—average and final grade.  
 Ikke bestaaet—not passed.  
 Meget godt—very good, usually written "mg."  
 Meget godt minus—very good minus, usually written "mg+."  
 Meget godt plus—very good plus, usually written "mg-."  
 Maadelig—fair, usually written "mdl."  
 Maadelig minus—fair minus, usually written "mdl+."  
 Maadelig plus—fair plus, usually written "mdl-."  
 Nul—zero.  
 Positiv Karakterkvotient—positive grade quotient.  
 Slet—poor.  
 Slet plus—poor plus.  
 Specialkarakter—special or subject mark.  
 Temmelig godt—pretty good, usually written "tg."  
 Temmelig godt minus—pretty good minus, usually written "tg+."  
 Temmelig godt plus—pretty good plus, usually written "tg-."  
 Udmaerket godt—excellent, usually written "ug."  
 Udmaerket godt minus—excellent minus, usually written "ug+."

*Terms in Latin Used in Grading*

Haud illaudabilis primi (Imi or 1mi) gradus—not without praise first degree or rank.  
 Haud illaudabilis secundi (IIdi or 2di) gradus—not without praise second degree.  
 Laudabilis—laudable.  
 Laudabilis et quidem egregie—laudable beyond others.  
 Laudabilis prae ceteris—laudable beyond others.  
 Non contemnendus—not bad or not to be condemned.

*Administrative Bodies*

Akademieraad—academy council.  
 Akademiske Laererforsamling—academic faculty council or academic council.  
 Forstander—superintendent.  
 Konsistorium—consistory.  
 Laererforsamling—faculty council.  
 Laererraad—faculty council.  
 Revisorkommission—auditors commission.  
 Undervisningsministeriet—National Ministry of Education.  
 Undervisningeraad—council of instruction or curriculum committee.

*Miscellaneous Terms*

Afhandling—thesis.

Amtslaege—county physician.

Apoteker—druggist.

Bifag—minor subject.

Bisprog—minor language.

Dagbog—day book.

Danske Hedeselskab—Danish society for the cultivation of heaths.

Discipel—pupil.

Docenter—instructors.

Eksamensarbejd—examination project or work.

Eksamensprojekt—examination project.

Eksaminatorier—examination classes.

Ekstraordinaer Deltager—extraordinary participant.

Embedslaeger—a physician employed by the government either as a county physician or as a district physician.

Forelaesninger—lectures.

Foreningen til unge Handelsmaends Uddannelse—association for the training of young business men.

Fortsættelsesundervisning—continuation instruction.

Fremstilling—presentation.

Hayebrugsstuderende—student in horticulture.

Hjemmeopgaver—home themes.

Hospital-volontær—hospital volunteer.

Kredslaeger—district physician.

Krone—one Krone at mint par is 0.4537 cents in the coinage of the United States.

Kursus—course.

Kursusarbejder—work performed during a regular course.

Hovedfag—major subject.

Hovedopgave—major theme or proposition.

Hovedsprog—major language.

Læge—physician.

Leerere ved Landbrugsskole—teacher at an agricultural school.

Landbrugsstuderende—student in agriculture.

Landinspektørstuderende—student in surveying.

Lektor—lecturer.

Manuduktør—tutor.

Mejeribrugastuderende—student in dairying.

Mindre Opgaver—lesser themes or propositions.

Normaltimeplaner—normal curricula.

Offentlig Forelaesning—public lecture.

Opgave—theme or proposition.

Orden—order and appearance.

Østre Landret—East Provincial Court.

Øvelser—exercises.

Øvelseskontor—practice office.

Pointantal—total number of points.

Polytekniske Eksaminer—those registered as polytechnical students.

Praktikant—practicant.

Rigshospital—national hospital.

Skolefag—school subjects.

Skovbrugsstuderende—student in forestry.

Speciale—special study generally including a thesis.

Specialstudier—special studies.

Specialstudium—field of special study.

Specialuddannelse—special training.

Sprogstudier—language studies.

Studieplaner—study plans.

Teoretisk Del—theoretical part.

Timeplan—curriculum.

Universitetsmanuduktionen—university coaching or tutoring.

Veterinaerstuderende—veterinary student.

Videnskabeligt Arbejde—scientific work.

Videnskabsgren—scientific branch of knowledge.

#### Phrases

Anden Del (2den Del)—part II.

2den og 3die Dele—parts II and III.

Bestaaet den danske Studentereksamen—passed the Danish student examination.

En af Höjskolens afsluttende Eksaminer med förste Karakter—one of the completion examinations of the college with first mark.

Förste Del (1ste Del)—part I.

Förste og anden Del—part I and part II.

Köbmandsskolens Afgangspröve i fremmede Sprog—leaving examination in foreign languages from the Merchants School.

Praktisk Del—practical part.

Selvstaendig Afhandling—an independently prepared thesis.

Skriftlige Opgaver—written themes or propositions.

Statens Raadgiver i kunstneriske Spørgsmaal—the advisor of the national government on questions of art.

Større Opgaver—larger themes or propositions.

Større skriftlig Opgave—larger written theme.

Studie og Eksamensordninger—study and examination regulations.

Supplerende eller videregaaende Uddannelse—supplementary or further training.

Tjenestegörande Praktikant—active practitioner or practicant.

Tredje Del—part III.

